WaterRight®
The Right Water for Life

Installation Instructions & Owner's Manual

Impression Series® *and* Impression Plus Series®

Water Filters

For Models:

- IMBF
- IMBF-MAN
- IMAN
- IMAF-MGS
- IMS
- IMB
- IAG
- IACG-AN
- IMPBF
- IMPBF-MAN
- IMPAF-MGS
- IMPS
- IMPB
- IPAG
- IPACG-AN

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YOUR WATER TEST

Hardness _____ gpg
Iron _____ ppm
pH _____ number
*Nitrates_____ ppm
Manganese _____ ppm
Sulphur _____ yes/no
Total Dissolved Solids_____

*Over 10 ppm may be harmful for human consumption.
Water conditioners do not remove nitrates or coliform bacteria, this requires specialized equipment.

Your Impression Series water filters are precision built, high quality products. These units will deliver filtered water for many years to come, when installed and operated properly. Please study this manual carefully and understand the cautions and notes before installing. This manual should be kept for future reference. If you have any questions regarding your water conditioner, contact your local dealer or the manufacturer at the following:

1900 Prospect Court • Appleton, WI 54914
Phone: 920-739-9401 • Fax: 920-739-9406

PREINSTALLATION INSTRUCTIONS FOR DEALERS:

The manufacturer has preset the water treatment unit's sequence of cycles and cycle times.

The dealer *should read this page and guide the installer regarding hardness, day override, and time of regeneration, before installation.*

For the installer, the following must be used:

- Program Installer Settings: Day Override (preset to 3 days) and Time of Regeneration (preset to 12 a.m.)
- Read Normal Operating Displays
- Set Time of Day
- Read Power Loss & Error Display

For the homeowner, please read sections on Bypass Valve and Operating Displays and Maintenance.

During operation, the normal user display is *time of day* and *gallons per minute*.

Flow Rate, Capacity Remaining and Days to a Regeneration are optional displays but are not normally used. Each of these can be viewed by pressing ***NEXT*** to scroll through them. When stepping through any programming, if no buttons are pressed within 5 minutes, the display returns to a normal user display. Any changes made prior to the 5 minute time out are incorporated. To quickly exit any Programming, Installer Settings, etc., press ***SET CLOCK***. Any changes made prior to the exit are incorporated.

If desired, two regenerations within 24 hours are possible with a return to the preset program.
To do a *double regeneration*:

1. Press the ***REGEN*** button once. "REGEN TODAY" will flash on the display.
2. Press and hold the ***REGEN*** button for three seconds until a regeneration begins.

Once the valve has completed the immediate regeneration, the valve will regenerate one more time at the preset.

BYPASS VALVE:

The bypass valve is typically used to isolate the control valve from the plumbing system's water pressure in order to perform control valve repairs or maintenance. The 1" full flow bypass valve incorporates four positions, including a diagnostic position that allows a service technician to have pressure to test a system while providing untreated bypass water to the building. Be sure to install bypass valve onto main control valve, before beginning plumbing. Or, make provisions in the plumbing system for a bypass. The bypass body and rotors are glass-filled Noryl® and the nuts and caps are glass-filled polypropylene. All seals are self-lubricating EPDM to help prevent valve seizing after long periods of non-use. Internal "O" Rings can easily be replaced if service is required.

The bypass consists of two interchangeable plug valves that are operated independently by red arrow shaped handles. The handles identify the direction of flow. The plug valves enable the bypass valve to operate in four positions.

1. ***NORMAL OPERATION POSITION:*** The inlet and outlet handles point in the direction of flow indicated by the engraved arrows on the control valve. Water flows through the control valve for normal operation of a water softener. During the regeneration cycle this position provides regeneration water to the unit, while also providing untreated water to the distribution system ***(Fig. 1)***.

2. ***BYPASS POSITION:*** The inlet and outlet handles point to the center of the bypass. The system is isolated from the water pressure in the plumbing system. Untreated water is supplied to the building ***(Fig. 2)***.

3. ***DIAGNOSTIC POSITION:*** The inlet handle points toward the control valve and the outlet handle points to the center of bypass valve. Untreated supply water is allowed to flow to the system and to the building, while not allowing water to exit from the system to the building (***Fig. 3)***. This allows the service technician to draw brine and perform other tests without the test water going to the building.

   NOTE: The system must be rinsed before returning the bypass valve to the normal position.

4. ***SHUT OFF POSITION:*** The inlet handle points to the center of the bypass valve and the outlet handle points away from the control valve. The water is shut off to the building. The water treatment system will depressurize upon opening a tap in the building. A negative pressure in the building combined with the softener being in regeneration could cause a siphoning of brine into the building. If water is available on the outlet side of the softener, it is an indication of water bypassing the system ***(Fig. 4)*** (i.e. a plumbing cross-connection somewhere in the building).

NORMAL OPERATION POSITION

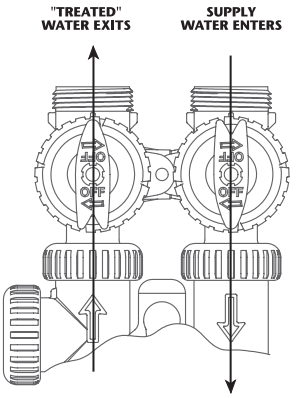


FIGURE 1

BYPASS POSITION

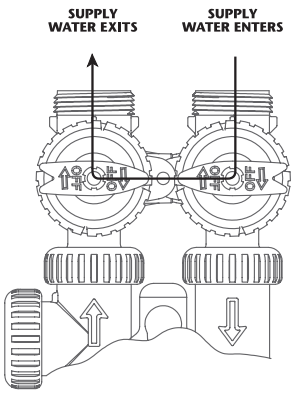


FIGURE 2

DIAGNOSTIC POSITION

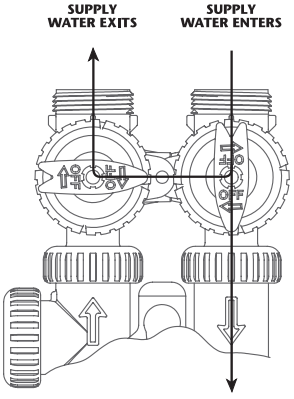


FIGURE 3

SHUT OFF POSITION

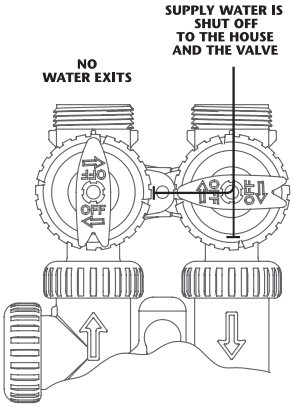


FIGURE 4

INSTALLATION:

GENERAL INSTALLATION & SERVICE WARNINGS

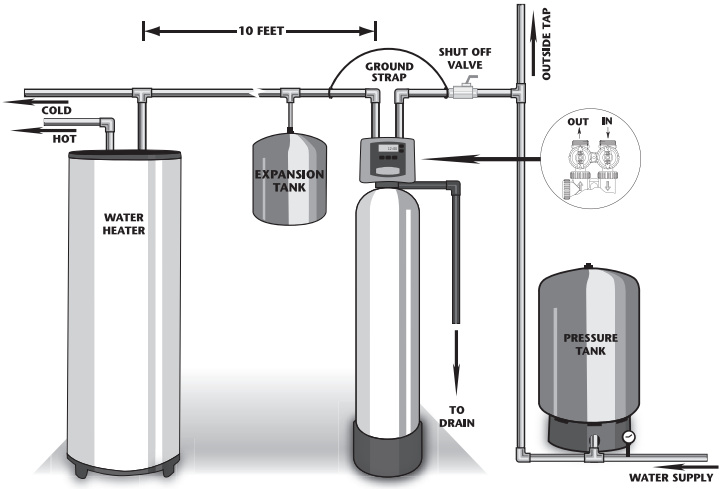
The control valve, fittings and/or bypass are designed to accommodate minor plumbing misalignments. There is a small amount of "give" to properly connect the piping, but the water softener is not designed to support the weight of the plumbing.

Do not use Vaseline, oils, other hydrocarbon lubricants or spray silicone anywhere. A silicone lubricant may be used on black "O" Rings, but is not necessary. *Avoid any type of lubricants, including silicone, on red or clear lip seals.*

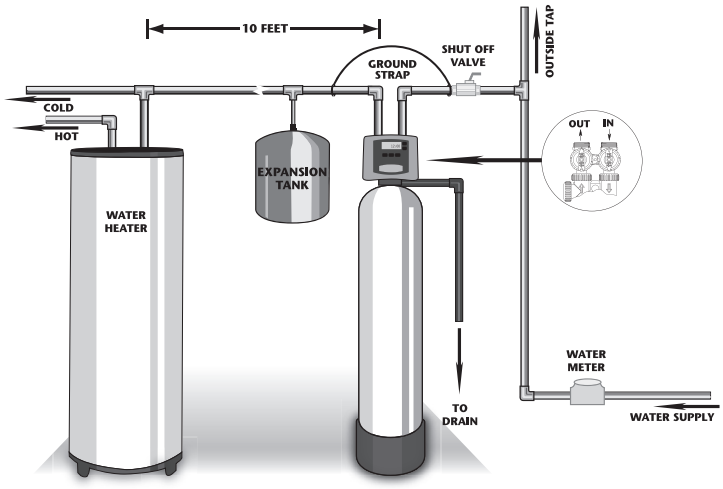
Do not use pipe dope or other sealants on threads. Teflon® tape must be used on the threads of the 1" NPT inlet and outlet, the brine line connection at the control valve, and on the threads for the drain line connection. Teflon® tape is not used on the nut connections or caps because "O" Ring seals are used. The nuts and caps are designed to be unscrewed or tightened by hand or with the special plastic Service Wrench, #CV3193-02. If necessary pliers can be used to unscrew the nut or cap. Do not use a pipe wrench to tighten nuts or caps. *Do not place screwdriver in slots on caps and/or tap with a hammer.*

SITE REQUIREMENTS

- water pressure – 25-100 psi
- water temperature – 33-100°F (0.5-37.7°C)
- electrical – 115/120V, 60Hz uninterrupted outlet
- current draw is 0.5 amperes
- the plug-in transformer is for dry locations only
- the tank should be on a firm level surface



WELL WATER INSTALLATION



MUNICIPAL INSTALLATION

1. The distance between the drain and the water conditioner should be as short as possible.

2. It is not recommended to install any water conditioner with less than 10 feet of piping between its outlet and the inlet of a water heater.

CAUTION: **To protect the unit in the event of a hot water heater backup, the manufacturer recommends the use of an expansion tank on the outlet side of the unit.**

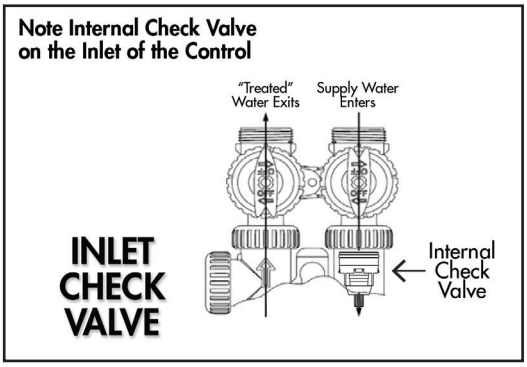
3. Do not locate unit where it or its connections (including the drain and overflow lines) will ever be subjected to room temperatures under 33°F.

4. Do not subject the tank to any vacuum, as this may cause an "implosion" and could result in leaking. If there is a possibility a vacuum could occur, please make provision for a vacuum breaker in the installation.

5. ***INLET/OUTLET PLUMBING:*** Be sure to install Bypass Valve onto main control valve before beginning plumbing. Make provisions to bypass outside hydrant and cold hard water lines at this time. Install an inlet shutoff valve and plumb to the unit's bypass valve inlet located at the right rear as you face the unit. There are a variety of installation fittings available. They are listed under Installation Fitting Assemblies, page 23-24. When assembling the installation fitting package (inlet and outlet), connect the fitting to the plumbing system first and then attach the nut, split ring and "O" Ring. Heat from soldering or solvent cements may damage the nut, split ring or "O" Ring. Solder joints should be cool and solvent cements should be set before installing the nut, split ring and "O" Ring. Avoid getting solder flux, primer, and solvent cement on any part of the "O" Rings, split rings, bypass valve or control valve. If the building's electrical system is grounded to the plumbing, install a copper grounding strap from the inlet to the outlet pipe. Plumbing must be done in accordance with all applicable local codes.

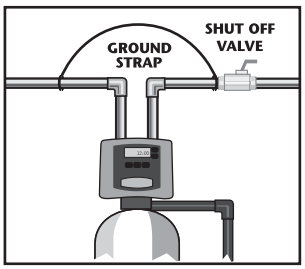
When installing an air regenerating filter the customer may experience, under certain conditions, small amounts of air (cloudy water) at the taps. This is normal. On rare occasions, this may result in "shots of air" at a particular fixture. By installing a loop or "U" on the outlet side of the unit, this will act as an air trap and improve this situation.

Located inside the inlet is an internal check valve ***(see diagram at right)***. This check valve holds the air in the system, preventing its escape from the tank. Plumbing codes may require the installation of a thermal expansion tank on the outlet side of the system to prevent a water heater backup condition. ***(See Installation Diagrams on page 5.)***


Note Internal Check Valve on the Inlet of the Control
"Treated" Water Exits
Supply Water Enters
INLET CHECK VALVE
Internal Check Valve

Provisions should be made to bypass outside hydrants that are not to have filtered water. It is also advisable to install hose bibs on the inlet and outside of the filter for future testing and service of the equipment. Where heavy sediment from the well is observed, it is advisable to install a cartridge or bag-style filter immediately upstream from the filter. A nominal micron rating of 50 to 100 is recommended. The purpose of this is to protect the control valve of any debris from the well. If desired, a cartridge filter may be used after the system as a polishing filter.

6. ***INSTALLING GROUND:*** To maintain an electrical ground in metal plumbing of a home's cold water piping (such as a copper plumbing system), install a ground clamp or jumper wiring. If replacing an existing filter, also replace the ground clamps/wire. If removing a filter, replace the piping with the same type of piping as the original to assure plumbing integrity and grounding.



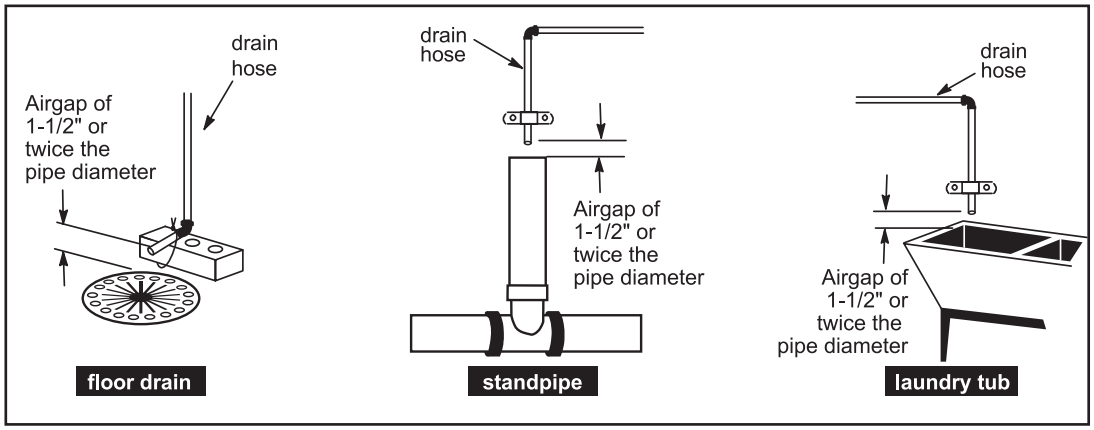
7. ***DRAIN LINE:*** First, be sure that the drain can handle the backwash rate of the system. Solder joints near the valve must be done prior to connecting the drain line flow control fitting. Leave at least 6" between the drain line flow control fitting and solder joints. Failure to do this could cause interior damage to the flow control.

Backwash of an automatic filter can be directed into a septic tank in most cases, but because of the higher volume of water discharged, care should be taken. The backwash discharge can be directed to a subsurface drainage system or other safe location. Remember to follow all local codes.

When installing the drain line on any backwashing filter, especially Impression filters that utilize air as the regenerant, hard piping such as PVC, Schedule 80 Plastic or copper is recommended. Remove the drain line nut (if included) and discard. A 3/4" NPT connection on the elbow is provided. ***During backwash, high volumes of water (more than a softener) and air can be expelled. This release of air can cause a thrashing or movement of the drain line causing it to dislodge from the drain, resulting in water damage. In order to prevent this, it is recommended to use other means of securing the drain line to the floor, wall or ceiling to avoid this thrashing of piping.*** Our patent pending Backwash Air cycle greatly reduces the chance of this occurring but should not be the only means of protection.

Where the drain line is elevated but empties into a drain below the level of the control valve, form a 7" loop at the discharge end of the line so that the bottom of the loop is level with the drain connection on the control valve. This will provide an adequate anti-siphon trap. Piping the drain line overhead <10 ft is normally not a problem. Be sure adequate pressure is available (40-60 psi is recommended). Where the drain empties into an overhead sewer line, a sink-type trap must be used. Run drain to its discharge point in accordance with plumbing codes. Pay special attention to codes for air gaps and anti-siphon devices.

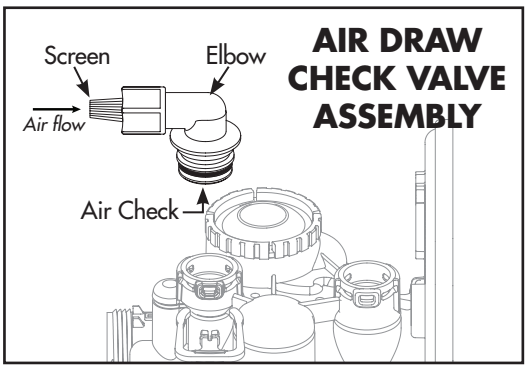
CAUTION: **Never insert a drain line into a drain, sewer line, or trap. Always allow an air gap between the drain line and the wastewater to prevent the possibility of sewage being back-siphoned into the conditioner.**



TYPICAL DRAIN LINE INSTALLATIONS

8. ***CHECK VALVE:*** All air systems include an internal check valve and screen assembly as part of the air draw system ***(see diagram at right)***. This check valve, screen, and elbow are exclusive to the air system and are not to be confused or interchanged with a brine elbow used on a softener. The gray color of the elbow indicates use with an air system vs. a black elbow which indicates use with a water softeners.

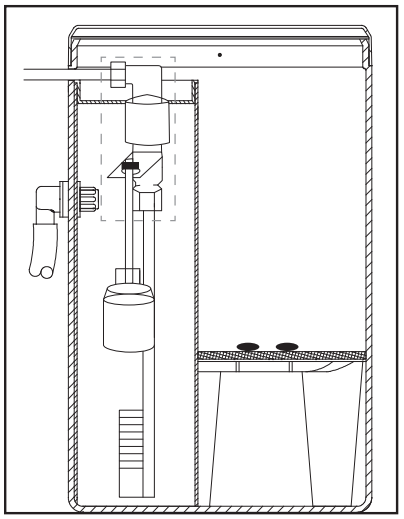
   NOTE: Under certain conditions (finished basements, utility room, etc.) it may be advisable to disconnect the screen and run a 3/8" line close to a drain, in case of check valve failure and water leakage.



AIR DRAW CHECK VALVE ASSEMBLY

9. ***DISINFECTION OF SYSTEM:*** In situations where additional disinfection is needed, due to high levels of iron or sulfur bacteria, this may be accomplished with a small chlorine feeder ***(see diagram at right)***. It can be used in conjunction with air systems and is used to control bacterial growth within the filter vessel itself. It is not used to control bacteria downstream of the filter nor for disinfection of the water itself. Chlorine disinfection is not used with some medias such as Birm. Please consult distributor or factory for more details.

   This tank operates much the same way a brine tank does with a water softener. A small amount of water is added to the tank just prior to regeneration, which comes into contact with the chlorine pellets, dissolves them and is then drawn into the filter to disinfect the system periodically and then safely rinsed away. We recommend the use of pellets manufactured by Better Water Industries, available through the manufacturer or your local distributor.


CHLORINE FEEDER TANK

<u>To Dealer:</u>

CAUTION: **On certain Impression air models, the Backwash Air cycle is not available when using the chlorine feeder tank. Drain line must be of rigid materials and affixed securely to floor, wall or ceiling.** ***See Drain Line instructions.***

This tank has many intended uses. If chlorine is being used, add only two or three pellets (two or three grams) of chlorine at a time. We recommend Better Water Industries chlorine pellets. Do not overfill container. Use rubber gloves when handling pellets. Always read safety precautions of chemical container before adding to tank.

If chlorine is being used, never add or mix any chemical in chlorine tank other than chlorine. Always read safety precautions on container before adding any chemical to this tank. Only use in well ventilated area. Chlorine fumes can be corrosive and harmful. Inhalation of chlorine gas can be deadly. Use drip pan underneath tank in case of corrosion or leaking of tank. Always install an overflow line to the chlorine tank and run to an appropriate drain. Do not connect drain from filter to this tank. Drains should remain separate.

PROGRAMMING PROCEDURES:

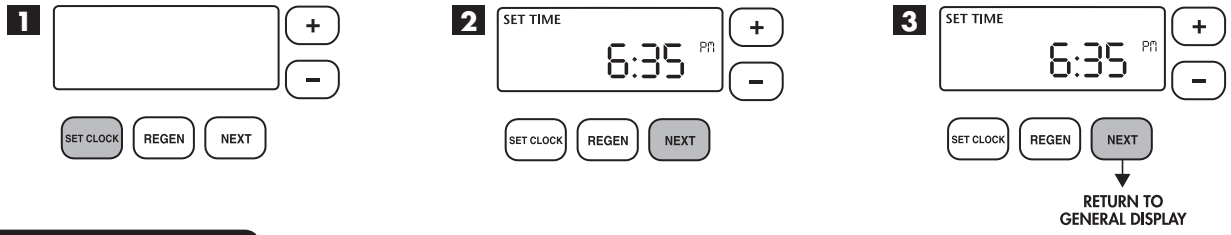
1. Set time of day:

Time of day should only need to be set after extended power outages or when daylight saving time begins or ends. If an extended power outage occurs, the time of day will flash on and off indicating that the time should be reset.

STEP 1 – Press ***SET CLOCK***.

STEP 2 – ***CURRENT TIME (HOUR):*** Set the hour of the day using **+** or **–** buttons. AM/PM toggles after 12. Press ***NEXT*** to go to step 3.

STEP 3 – ***CURRENT TIME (MINUTES):*** Set the minutes using **+** or **–** buttons. If it is desired to back up to the previous step press ***REGEN*** button once. Pressing ***NEXT*** will exit ***SET CLOCK*** and return to the general operating display (page 10).



2. Programming:

NOTE: The manufacturer has preset the unit so that the gallons between regenerations will be automatically calculated after the hardness is entered.

STEP 1 – Press ***NEXT*** and **+** simultaneously for 3 seconds.

STEP 2 – ***HARDNESS:*** This display will show "–nA– (not available)" if "FILTER" is selected.

Press ***NEXT*** to go to step 3. Press ***REGEN*** to exit.

STEP 3 – ***DAY OVERRIDE:*** The manufacturer has factory set 3 DAYS as the default. This is the maximum number of days between regenerations. If this is set to "OFF", regeneration initiation is based solely on gallons used. If any number is set (allowable range from 1 to 28), a regeneration initiation will be called for on that day even if a sufficient number of gallons were not used to call for a regeneration.

Set Day Override using **+** or **–** buttons (3 is recommended):

- set number of days between regeneration (1 to 28); or
- set to "OFF".

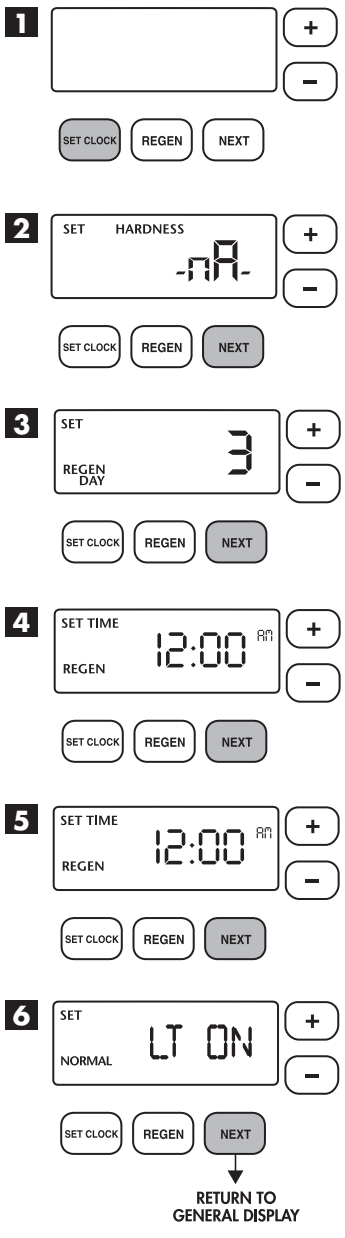
Press ***NEXT*** to go to step 4. Press ***REGEN*** if you need to return to the previous step.

STEP 4 – ***REGENERATION HOUR:*** The manufacturer has factory set 12:00 A.M. as the default. This is the hour of day for regeneration and can be reset by using **+** or **–** buttons. "AM/PM" toggles after 12. The default time is 12:00 a.m. (recommended for a normal household).

Press ***NEXT*** to go to step 5. Press ***REGEN*** if you need to return to the previous step.

STEP 5 – ***REGENERATION MINUTES:*** Set the minutes using **+** or **–** buttons. Press ***NEXT*** to exit installer programming. Press ***REGEN*** if you need to return to the previous step. To initiate an immediate manual regeneration, press and hold the ***REGEN*** button for three seconds. The system will begin to regenerate immediately. The control may be manually stepped through the regeneration cycles by pressing ***REGEN***.

STEP 6 – ***BACKLIGHT DISPLAY CONTROL*** *(Not available on all models):* Set the display backlight on or off using **+** or **–** buttons. In the OFF position, the backlight will turn off after 5 minutes of inactivity.



STARTUP INSTRUCTIONS:

FLUSHING OF SYSTEM:

To flush the system of any debris and air after installation is complete, please perform the following steps:

1. Rotate bypass handles to the bypass mode ***(see Fig. 2 of page 4)***.
2. Turn on inlet water and check for leaks in the newly installed plumbing.
3. Fully open a cold water faucet, preferable at a laundry sink or bathtub without an aerator.
4. Wait two to three minutes or until water runs clear, then turn water off and follow start-up instructions.

System regeneration sequence is in the following order. Some sequence differences may be noticed depending upon local conditions. (If it is desired to change this sequence, please refer to the Dealer Manual or contact the manufacturer.)

Sequencing for Various Filters:

Air Filters
1. Backwash Air
2. Backwash
3. Regenerant Draw Down (Air draw)
4. Return to service

Backwashing Filters
1. Backwash
2. Rinse
3. Backwash
4. Rinse
5. Return to service

Acid Neutralizers
1. Backwash
2. Filtering
3. Rapid Rinse
4. Backwash
5. Filtering
6. Rapid Rinse
7. Return to service

Inch Worm Feature: Impression air units are programmed with the backwash air cycle feature (nicknamed "inch worm"). This unique feature allows for small movements or "inching" of the piston towards the backwash cycle. As the piston approaches this cycle, the backwash port opens slightly with each advancement, allowing air to escape to drain. This cycle is ten very small mini steps of the piston which take place thirty seconds apart. Usually midway between the ten positions, the air begins to be released very slowly to the drain in normal operating conditions.

When first starting up an air sulfur or air iron, it is advised to step through these positions and go to the normal backwash cycle in order to fill the unit.

To advance in Backwash Air cycle:

1. Pushing the ***NEXT*** button will advance to each of the ten mini steps within the backwash air cycle. While there are usually ten steps to this cycle, the valve may make two or three movements for each step. Wait for these movements to complete before pressing ***NEXT*** again.
2. Pushing and holding the ***REGEN*** button for three seconds while in the Backwash Air cycle will skip the remaining mini steps and proceed to the next cycle of regeneration which is usually Backwash.

The system is now ready for filling with water and for testing.

1. Place the bypass valve into the bypass mode ***(Fig. 2 on page 4)***.
2. Press and hold the ***REGEN*** button until the motor starts. Release button. Put the valve into "BACKWASH" position. *(Please see note above.)* Unplug the transformer so that the valve will not cycle to the next position. Open the inlet handle of the bypass valve very slightly allowing water to fill the tank slowly in order to expel air.

CAUTION: **If water flows too rapidly, there will be a loss of media to the drain. Certain medias such as carbon, or other dry media, should not be backwashed immediately for extended periods of time. These medias need to "soak" in the water for a 24-hour period prior to full backwash conditions.**

Media is dry and filling with water too quickly in backwash will result in media plugging the drain and valve assembly.

3. After the water is flowing steadily to the drain, clear and without the presence of air, slowly open the inlet valve. Restore power and momentarily press the ***REGEN*** button to advance the control to the "REGENERANT DRAW DOWN" position.
4. With the bypass still in the diagnostic mode ***(Fig. 3 on page 4)***, there should be a slow flow to the drain.
5. Press ***REGEN*** button in sequence until display returns to "TIME." Place bypass valve in the normal operating mode ***(Fig. 1 on page 4)*** by opening the outlet bypass handle.
6. Go to laundry tub or bathtub faucet, preferable a faucet without an aerator, and turn on cold water. Let the water run. Note the color of water coming from faucet. If discolored, let water run until clear. If severely discolored, place unit into "BACKWASH" position (step 2) and run water to the system's drain until clear.

   Note: At no time should there by large particles of media noticed at faucet or laundry tub. If this is seen, immediately shut off water and bypass system, as this could be an indication of a distributor failure. Contact manufacturer or distributor for assistance.
7. Place unit into regeneration again and allow to complete cycle. Upon completion, unit will be regenerated and will deliver treated water.

OPERATING DISPLAYS AND INSTRUCTIONS:

1. ***GENERAL OPERATION:*** When the system is operating, one of three displays may be shown. Pressing ***NEXT*** will alternate between the displays. One of the displays is always the current time of day. The second display shows the current treated water flow rate through the system in Gallons Per Minute. The third display is capacity remaining. Capacity remaining is the gallons that will be treated before the system goes through a regeneration cycle. The user can scroll between the displays as desired.

   If the system has called for a regeneration that will occur at the preset time of regeneration, the words "REGEN TODAY" will appear on the display.

   If a water meter is installed, the word "Softening" or "Filtering" flashes on the display when water is being treated (i.e. water is flowing through the system).

2. ***REGENERATION MODE:*** Typically a system is set to regenerate at a time of no water use. If there is a demand for water when the system is regenerating, untreated water will be delivered. When the system begins to regenerate, the display will change to include information about the step of the regeneration process and the time remaining for that step to be completed. The system runs through the steps automatically and will reset itself to provide treated water when the regeneration has been completed.

3. ***MANUAL REGENERATION:*** Sometimes there is a need to regenerate before the control valve calls for it. This may be needed if a period of heavy water use is anticipated or when the system has been operated without salt.

   - To initiate a manual regeneration *at the next preset regeneration time,* press and release ***REGEN***. The words "REGEN TODAY" will flash on the display to indicate that the system will regenerate at the next regeneration time (set in Programming, steps 4 and 5). *If you pressed the* ***REGEN*** *button in error, pressing the button again will cancel the command.*
   - To initiate a manual regeneration *immediately,* press and hold the ***REGEN*** button for three seconds. The system will begin to regenerate immediately. ***This command cannot be cancelled.***

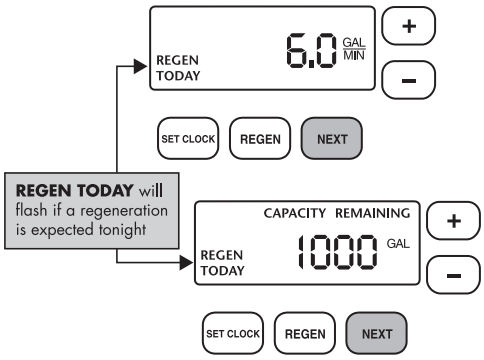
   Once a manual regeneration is initiated, the unit will go into the BACKWASH position and subsequent positions thereafter (see Start-Up Instructions for regeneration sequence), the water filter will deliver water, but it will be untreated.

4. ***POWER LOSS AND BATTERY REPLACEMENT:*** The AC transformer comes with a 15 foot power cord and is designed for use with the control valve; the transformer should only be used in a dry location.

   In the event of a power outage that is less than 24 hours, the control valve will remember all settings and time of day. After 24 hours, the only item that needs to be reset is the time of day and will be indicated by the time of day flashing. All other settings are permanently stored in the nonvolatile memory.

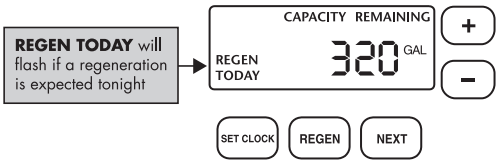
   If a power loss occurs that *is less than 24 hours and the time of day flashes,* this indicates that the battery is depleted. The time of day should be reset and the non-rechargeable battery should be replaced. The battery is a 3 Volt Lithium Coin Cell type 2032 and is readily available at most stores. To access battery location, remove front cover (*see diagram on page 14 for battery location).*

GENERAL OPERATION DISPLAYS

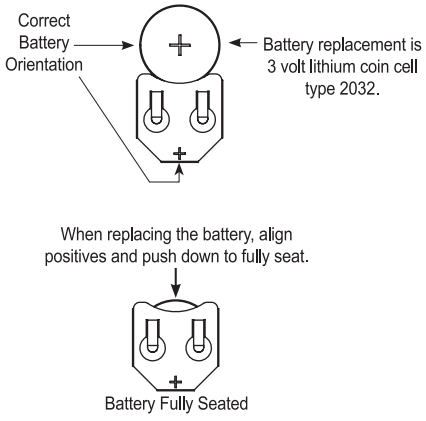


REGENERATION MODE

MANUAL REGENERATION

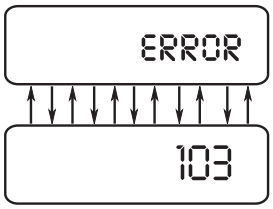


BATTERY REPLACEMENT


Correct Battery Orientation
Battery replacement is 3 volt lithium coin cell type 2032.
When replacing the battery, align positives and push down to fully seat.
Battery Fully Seated

5. ***ERROR MESSAGE:*** If the word "ERROR" and a number are alternately flashing on the display record the number and contact the dealer for help. This indicates that the control valve was not able to function properly.

ERROR MESSAGE



6. ***CHLORINE TANK AND MAINTENANCE:*** In severe cases where iron or sulfate bacteria conditions exist, the dealer may have installed a chlorine tank with your system ***(see diagram, page 7)***. These bacteria are harmless to human health, however they can produce a slime and occasionally an odor that can be a nuisance. Filters equipped with a chlorine tank will periodically draw a chlorinated water solution into the filter tank killing these unwanted bacteria within the filter itself. The chlorine is rinsed from the system during the regeneration process. More specifically, a small amount of water will be added to the tank just prior to regeneration; this comes in contact with the chlorine pellets, dissolves them, and is drawn into the filter to disinfect the system periodically.

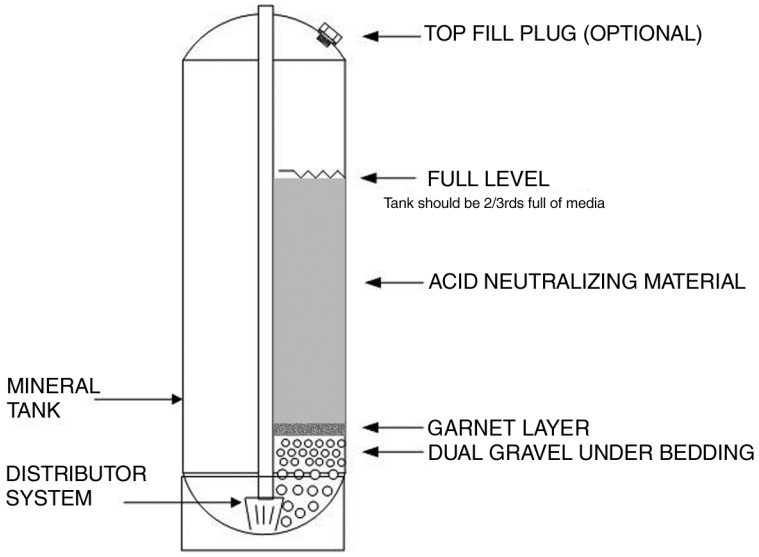
   We recommend the use of pellets manufactured by Better Water Industries, available through your dealer. Periodically check storage tank and add two or three chlorine tablets (two or three grams) at a time.

CAUTION: This tank has many intended uses. If chlorine is being used, only add two or three pellets (two or three grams) of chlorine at a time. We recommend Better Water Industries chlorine pellets. Do not overfill container. Use rubber gloves when handling pellets. Always read safety precautions of chemical container before adding to tank. Keep out of reach of children!

If chlorine is being used, never add or mix any chemical in chlorine tank other than chlorine. Only use in well ventilated area. Chlorine gas can be corrosive and harmful. Inhalation of chlorine gas can be deadly. Use drip pan underneath tank in case of corrosion or leaking of tank.

REPLACEMENT MINERAL INSTRUCTIONS FOR ACID NEUTRALIZERS:

The IMBF-AN, IMAN and IACG systems raise the pH of mildy acidic water. The raising of pH utilizes a sacrificial mineral that will need replenishment every 6 to 12 months. Typically the media should not be below the halfway point in the tank. In order to check the mineral height and before adding mineral to the system, please follow these instructions.



1. Check the media height by shining a flashlight through the tank to see the height of the mineral. If the level is not seen, the top fill plug will have to be removed (if available) to measure the height. Proceed to step 2.
2. To remove top fill plug, turn off the source of the water and open a conditioned water tap to relieve the water pressure on the system. Place unit into the bypass mode. Unscrew the top fill plug.

CAUTION: **Never unscrew top fill plug unless pressure is fully released from system. Serious injury and/or flooding can occur.**

3. Siphon out some water from the tank through the dome hole. This will allow room when adding the media.
4. Add the appropriate amount of calcite (replacement media) through the dome hole. If needed, siphon out more water as the media will displace the water inside the tank. Pay close attention to media level when filling. ***Do not overfill.*** The additional media added should not be higher than two-thirds of the tank height when measuring from the bottom (see diagram). Once the right height has been achieved, replace top fill plug. Grease "O" ring if necessary using only silicone grease. Do not use petroleum based grease such as Vaseline. Tighten appropriately.
5. Leaving controller in the bypass position, turn on water source and refer to the start-up instructions of the controller and complete the procedure.
6. Once start up is complete, please check the top fill plug for any leaking.

TROUBLESHOOTING GUIDE:

PROBLEM	CAUSE	CORRECTION
1. No display on PC board	A. No power at electric outlet	A. Repair outlet or use working outlet
	B. Control valve power adapter not plugged into outlet or power cord end not connected to PC board connection	B. Plug power adapter into outlet or connect power cord end to PC board connection
	C. Improper power supply	C. Verify proper voltage is being delivered to PC board
	D. Defective power adapter	D. Replace power adapter
	E. Defective PC board	E. Replace PC board
2. PC board does not display correct time of day	A. Power adapter plugged into electric outlet controlled by light switch	A. Use uninterrupted outlet
	B. Tripped breaker switch and/or tripped GFI	B. Reset breaker switch and/or GFI switch
	C. Power outage	C. Reset time of day. If PC board has battery back up present the battery may be depleted. See front cover and drive assembly drawing for instructions.
	D. Defective PC board	D. Replace PC board
3. Display does not indicate that water is flowing. Refer to user instructions for how the display indicates water is flowing.	A. Bypass valve in bypass position	A. Turn bypass handles to place bypass in service position
	B. Meter is not connected to meter connection on PC board	B. Connect meter to three pin connection labeled METER on PC board
	C. Restricted/stalled meter turbine	C. Remove meter and check for rotation or foreign material
	D. Meter wire not installed securely into three pin connector	D. Verify meter cable wires are installed securely into three pin connector labeled METER
	E. Defective meter	E. Replace meter
	F. Defective PC board	F. Replace PC board
4. Control valve regenerates at wrong time of day	A. Power outage	A. Reset time of day. If PC board has battery back up present the battery may be depleted. See front cover and drive assembly drawing for instructions.
	B. Time of day not set correctly	B. Reset to correct time of day
	C. Time of regeneration set incorrectly	C. Reset regeneration time
	D. Control valve set at "on 0" (immediate regeneration)	D. Check programming setting and reset to NORMAL (for a delayed regen time)
	E. Control valve set at "NORMAL + on 0" (delayed and/or immediate)	E. Check programming setting and reset to NORMAL (for a delayed regen time)
5. Time of day flashes on and off	A. Power outage	A. Reset time of day. If PC board has battery back up present the battery may be depleted. See front cover and drive assembly drawing for instructions.
6. Control valve does not regenerate automatically when the correct button(s) is depressed and held. For timeclock valves the buttons are ▲ & ▼. For all other valves the button is REGEN.	A. Broken drive gear or drive cap assembly	A. Replace drive gear or drive cap assembly
	B. Broken piston rod	B. Replace piston rod
	C. Defective PC board	C. Defective PC board

TROUBLESHOOTING GUIDE *cont'd:*

PROBLEM	CAUSE	CORRECTION
7. Control valve does not regenerate automatically but does when the correct button(s) is depressed and held. For timeclock valves the buttons are ▲ & ▼. For all other valves the button is REGEN.	A. Bypass valve in bypass position	A. Turn bypass handles to place bypass in service position
	B. Meter is not connected to meter connection on PC board	B. Connect meter to three pin connection labeled METER on PC board
	C. Restricted/stalled meter turbine	C. Remove meter and check for rotation or foreign material
	D. Incorrect programming	D. Check for programming error
	E. Meter wire not installed securely into three pin connector	E. Verify meter cable wires are installed securely into three pin connector labeled METER
	F. Defective meter	F. Replace meter
	G. Defective PC board	G. Replace PC board
8. Hard or untreated water is being delivered	A. Bypass valve is open or faulty	A. Fully close bypass valve or replace
	B. Media is exhausted due to high water usage	B. Check program settings or diagnostics for abnormal water usage
	C. Meter not registering	C. Remove meter and check for rotation or foreign material
	D. Water quality fluctuation	D. Test water and adjust program values accordingly
	E. No regenerant or low level of regenerant in regenerant tank	E. Add proper regenerant to tank
	F. Control fails to draw in regenerant	F. Refer to Troubleshooting Guide number 12
	G. Insufficient regenerant level in regenerant tank	G. Check refill setting in programming. Check refill flow control for restrictions or debris and clean or replace
	H. Damaged seal/stack assembly	H. Replace seal/stack assembly
	I. Control valve body type and piston type mix matched	I. Verify proper control valve body type and piston type match
	J. Fouled media bed	J. Replace media bed
9. Control valve uses too much regenerant	A. Improper refill setting	A. Check refill setting
	B. Improper program settings	B. Check program setting to make sure they are specific to the water quality and application needs
	C. Control valve regenerates frequently	C. Check for leaking fixtures that may be exhausting capacity or system is undersized
10. Residual regenerant being delivered to service	A. Low water pressure	A. Check incoming water pressure – water pressure must remain at minimum of 25 psi
	B. Incorrect injector size	B. Replace injector with correct size for the application
	C. Restricted drain line	C. Check drain line for restrictions or debris and clean
11. Excessive water in regenerant tank	A. Improper program settings	A. Check refill setting
	B. Plugged injector	B. Remove injector and clean or replace
	C. Drive cap assembly not tightened in properly	C. Retighten the drive cap assembly
	D. Damaged seal/stack assembly	D. Replace seal/stack
	E. Restricted or kinked drain line	E. Check drain line for restrictions or debris and or unkink drain line
	F. Plugged backwash flow controller	F. Remove backwash flow controller and clean or replace
	G. Missing refill flow controller	G. Replace refill flow controller

PROBLEM	CAUSE	CORRECTION
12. Control valve fails to draw in regenerant	A. Injector is plugged	A. Remove injector and clean or replace
	B. Faulty regenerant piston	B. Replace regenerant piston
	C. Regenerant line connection leak	C. Inspect regenerant line for air leak
	D. Drain line restriction or debris cause excess back pressure	D. Inspect drain line and clean to correct restriction
	E. Drain line too long or too high	E. Shorten length and or height
	F. Low water pressure	F. Check incoming water pressure – water pressure must remain at minimum of 25 psi
13. Water running to drain	A. Power outage during regeneration	A. Upon power being restored control will finish the remaining regeneration time. Reset time of day. If PC board has battery back up present the battery may be depleted. See front cover and drive assembly drawing for instructions.
	B. Damaged seal/stack assembly	B. Replace seal/stack assembly
	C. Piston assembly failure	C. Replace piston assembly
	D. Drive cap assembly not tightened in properly	D. Retighten the drive cap assembly
14. E1, Err – 1001, Err – 101 = Control unable to sense motor movement	A. Motor not inserted full to engage pinion, motor wires broken or disconnected	A. Disconnect power, make sure motor is fully engaged, check for broken wires, make sure two pin connector on motor is connected to the two pin connection on the PC board labeled MOTOR. Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC board for 5 seconds and then reconnect.
	B. PC board not properly snapped into drive bracket	B. Properly snap PC board into drive bracket and then Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC board for 5 seconds and then reconnect.
	C. Missing reduction gears	C. Replace missing gears
15. E2, Err – 1002, Err – 102 = Control valve motor ran too short and was unable to find the next cycle position and stalled	A. Foreign material is lodged in control valve	A. Open up control valve and pull out piston assembly and seal/stack assembly for inspection. Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC board for 5 seconds and then reconnect.
	B. Mechanical binding	B. Check piston and seal/stack assembly, check reduction gears, check drive bracket and main drive gear interface. Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC board for 5 seconds and then reconnect.
	C. Main drive gear too tight	C. Loosen main drive gear. Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC board for 5 seconds and then reconnect.
	D. Improper voltage being delivered to PC board	D. Verify that proper voltage is being supplied. Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC board for 5 seconds and then reconnect.

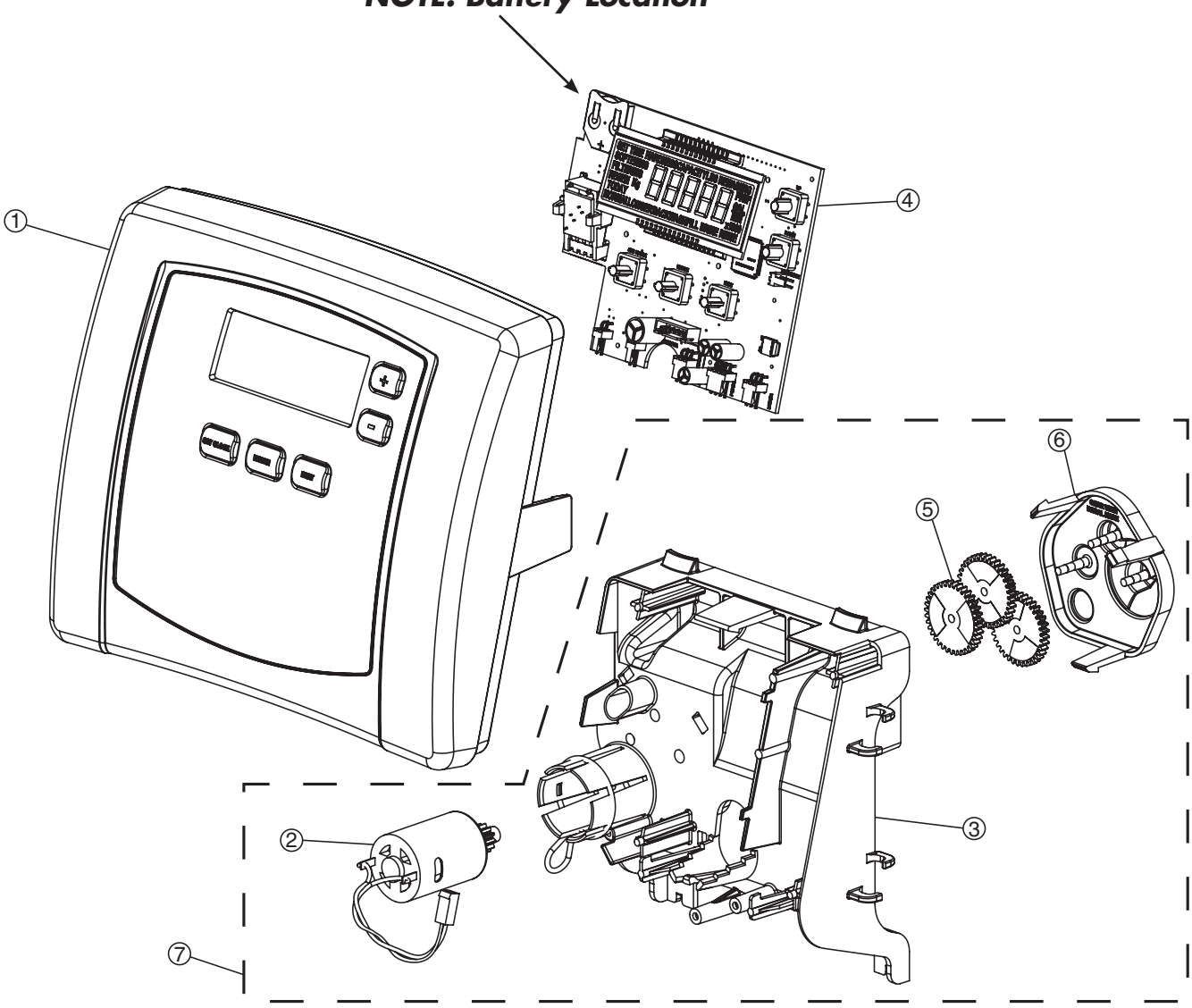
TROUBLESHOOTING GUIDE *cont'd:*

PROBLEM	CAUSE	CORRECTION
16. E3, Err – 1003, Err – 103 = Control valve motor ran too long and was unable to find the next cycle position	A. Motor failure during a regeneration	A. Check motor connections then Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC board for 5 seconds and then reconnect.
	B. Foreign matter built up on piston and stack assemblies creating friction and drag enough to time out motor	B. Replace piston and stack assemblies. Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC board for 5 seconds and then reconnect.
	C. Drive bracket not snapped in properly and out enough that reduction gears and drive gear do not interface	C. Snap drive bracket in properly then Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC board for 5 seconds and then reconnect.
17. E4, Err – 1004, Err – 104 = Control valve motor ran too long and timed out trying to reach home position	A. Drive bracket not snapped in properly and out enough that reduction gears and drive gear do not interface	A. Snap drive bracket in properly then Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC board for 5 seconds and then reconnect.
18. Err -1006, Err – 106, Err - 116 = MAV/ SEPS/ NHBP/ AUX MAV valve motor ran too long and unable to find the proper park position ***Motorized Alternating Valve = MAV*** ***Separate Source = SEPS*** ***No Hard Water Bypass = NHBP*** ***Auxiliary MAV = AUX MAV***	A. Control valve programmed for ALT A or B, nHbP, SEPS, or AUX MAV with out having a MAV or NHBP valve attached to operate that function	A. Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC board for 5 seconds and then reconnect. Then reprogram valve to proper setting
	B. MAV/NHBP motor wire not connected to PC board	B. Connect MAV/NHBP motor to PC board two pin connection labeled DRIVE. Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC board for 5 seconds and then reconnect.
	C. MAV/NHBP motor not fully engaged with reduction gears	C. Properly insert motor into casing, do not force into casing Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC board for 5 seconds and then reconnect.
	D. Foreign matter built up on piston and stack assemblies creating friction and drag enough to time out motor	D. Replace piston and stack assemblies. Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC board for 5 seconds and then reconnect.
19. Err – 1007, Err – 107, Err - 117 = MAV/ SEPS/NHBP/AUX MAV valve motor ran too short (stalled) while looking for proper park position ***Motorized Alternating Valve = MAV*** ***Separate Source = SEPS*** ***No Hard Water Bypass = NHBP*** ***Auxiliary MAV = AUX MAV***	A. Foreign material is lodged in MAV/NHBP valve	A. Open up MAV/NHBP valve and check piston and seal/ stack assembly for foreign material. Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC board for 5 seconds and then reconnect.
	B. Mechanical binding	B. Check piston and seal/stack assembly, check reduction gears, drive gear interface, and check MAV/NHBP black drive pinion on motor for being jammed into motor body. Press NEXT and REGEN buttons for 3 seconds to resynchronize software with piston position or disconnect power supply from PC board for 5 seconds and then reconnect.

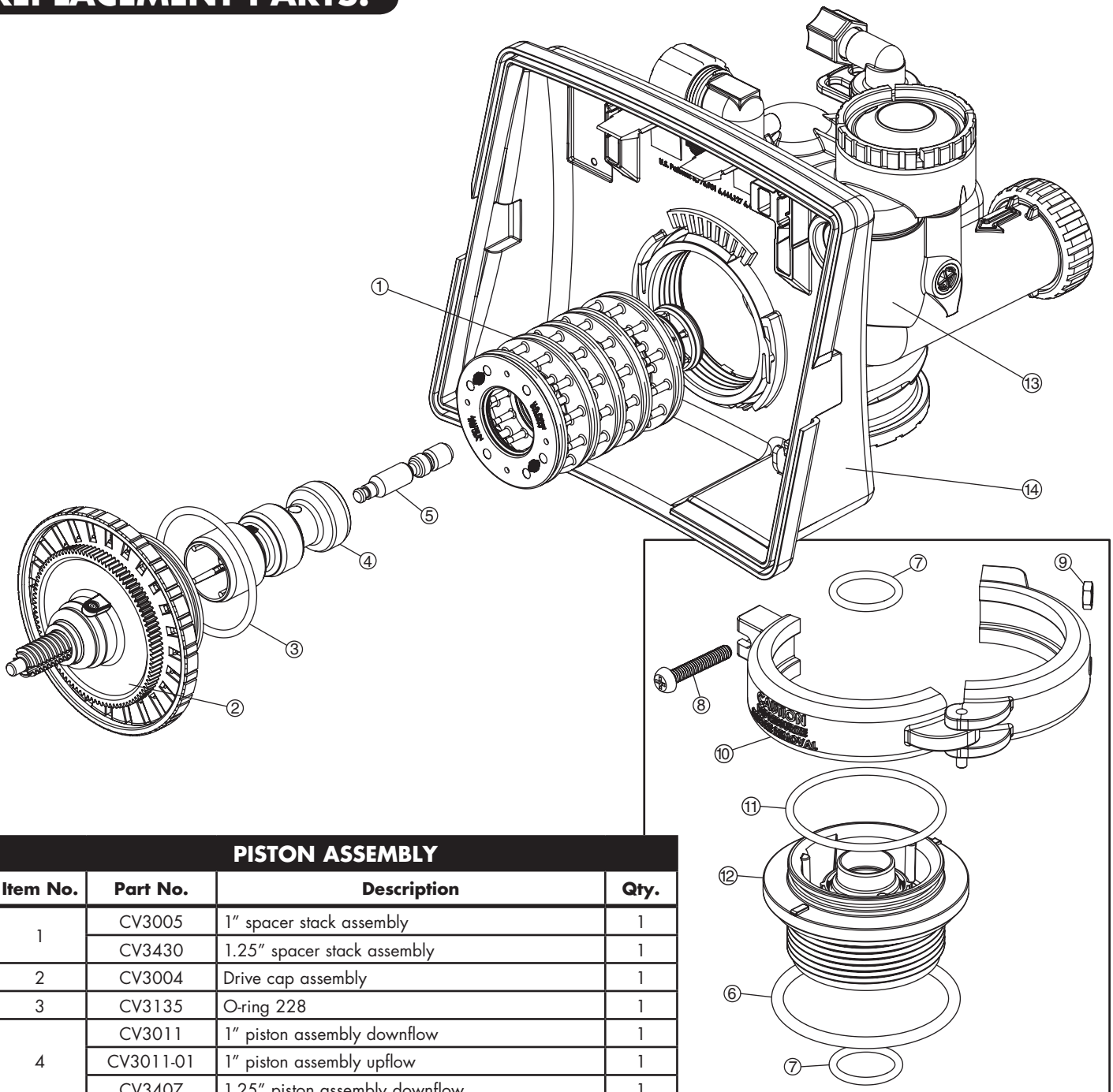
REPLACEMENT PARTS:

FRONT COVER AND DRIVE ASSEMBLY			
Item No.	**Part No.**	**Description**	**Qty.**
1	CV3540-A	Black Impression® cover	1
	CV3540-W-A	Gray Impression® cover	1
	CV3540P-A	Black Impression Plus® cover	1
	CV3540P-W-A	Gray Impression Plus® cover	1
2	CV3107-1	Motor	1
3	CV3106-1	Drive bracket & spring clip	1
4	CV3579WI	PC board, CC	1
5	CV3110	Drive gear, 12 x 36	3
6	CV3109	Drive gear cover	1
7	CV3002CC	Drive assembly, CC	-
	CV3186	Transformer, 110V-12V	1
	CV3543	***Optional*** weather cover	1

NOTE: Battery Location



REPLACEMENT PARTS:



PISTON ASSEMBLY			
Item No.	**Part No.**	**Description**	**Qty.**
1	CV3005	1" spacer stack assembly	1
	CV3430	1.25" spacer stack assembly	1
2	CV3004	Drive cap assembly	1
3	CV3135	O-ring 228	1
4	CV3011	1" piston assembly downflow	1
	CV3011-01	1" piston assembly upflow	1
	CV3407	1.25" piston assembly downflow	1
5	CV3174	Regenerant piston	1
6	CV3180	O-ring 337	1
7	CV3105	O-ring 215	1
8	CV3556	Screw, 1/4-20x1-1/2 18-8SS	1
9	CCI-00318337	Nut, 1/4-20 HEX 18-8SS	1
10	CV3016	QC2 clamp assembly (includes screw & nut)	1
11	CV3452	O-ring 230	1
12	CV3015	WS1 QC2 Tank adapter assembly (includes O-rings)	1
13	CV3001-04	1" body assembly downflow	1
	CV3001-04UP	1" body assembly upflow	1
13	CV3001	1" body assembly downflow	1
	CV3001UP	1" body assembly upflow	1
	CV3020	1.25" body assembly downflow	1
14	CV3541	Drive backplate	1

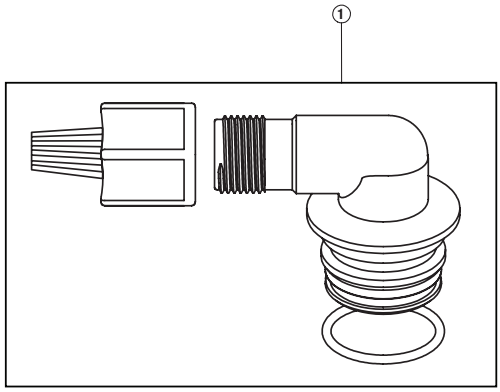
NOTE: For Impression Plus® Models only. Not available on 1¼" valve.

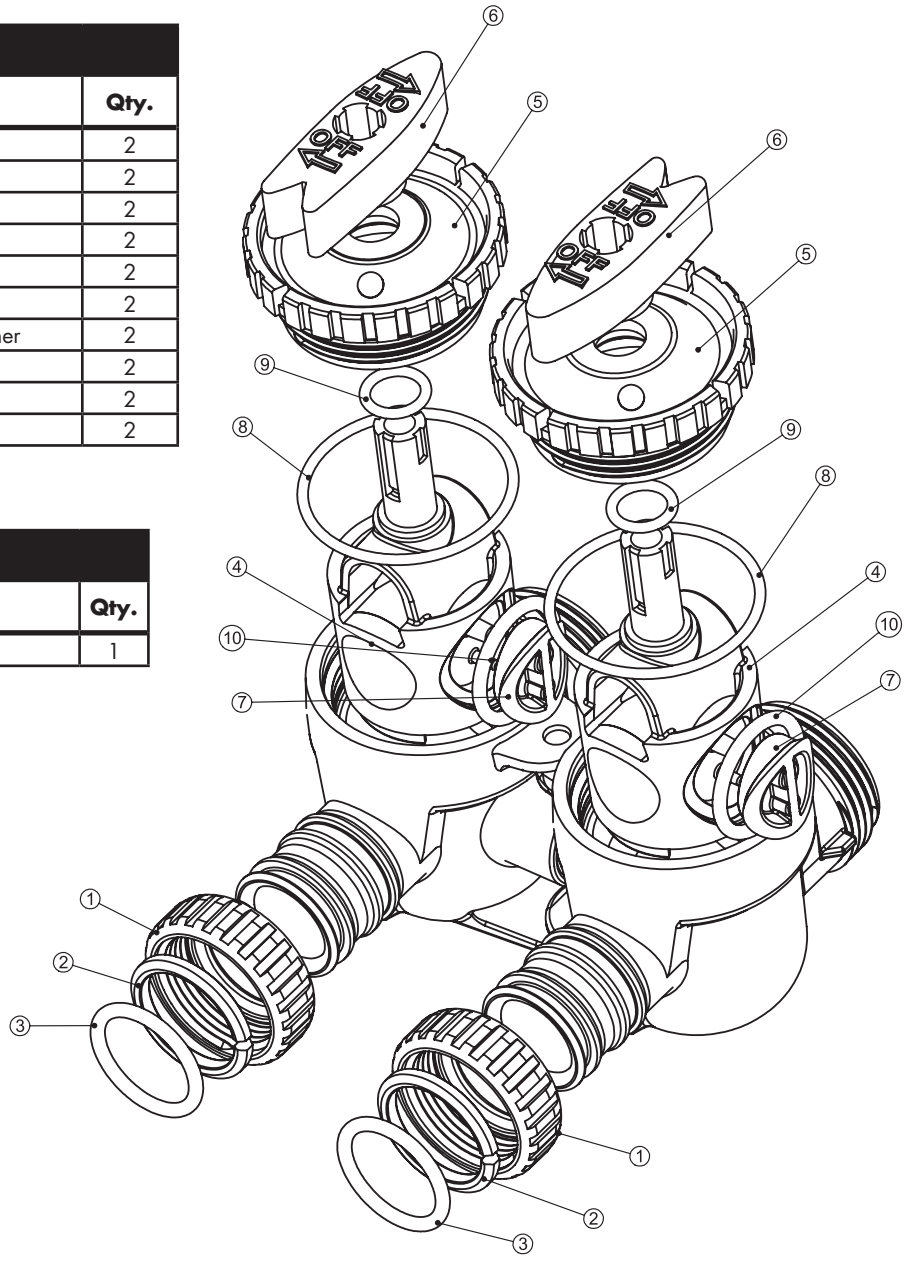
For Impression Plus® Models Only

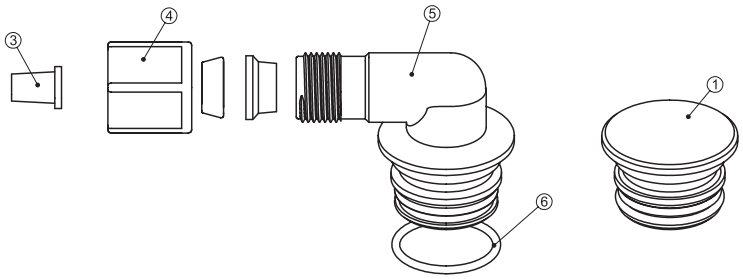
REPLACEMENT PARTS:

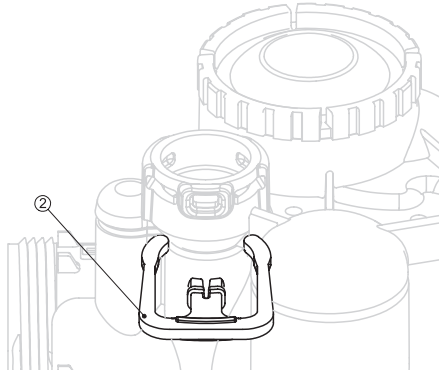
BYPASS VALVE			
Item No.	**Part No.**	**Description**	**Qty.**
1	CV3151	Nut, 1" quick connect	2
2	CV3150	Split ring	2
3	CV3105	O-ring 215	2
4	CV3145	Bypass rotor, 1"	2
5	CV3146	Bypass cap	2
6	CV3147	Bypass handle	2
7	CV3148	Bypass rotor seal retainer	2
8	CV3152	O-ring 135	2
9	CV3155	O-ring 112	2
10	CV3156	O-ring 214	2

CHECK VALVE ASSEMBLY			
Item No.	**Part No.**	**Description**	**Qty.**
1	CH4642-WR-A	Air check valve assembly	1



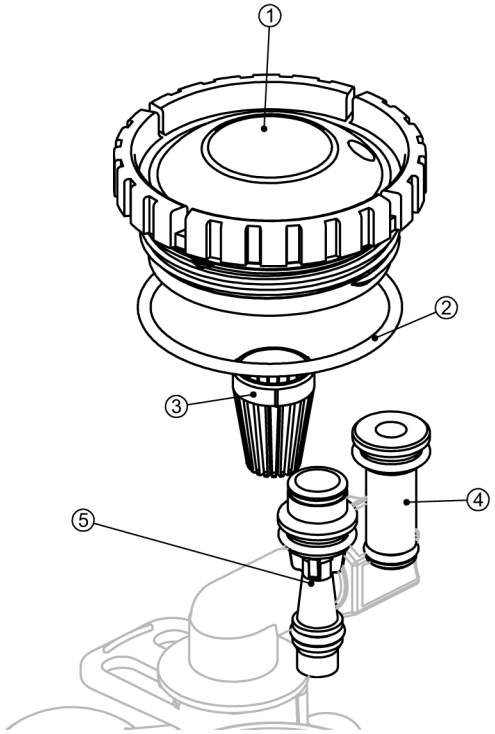






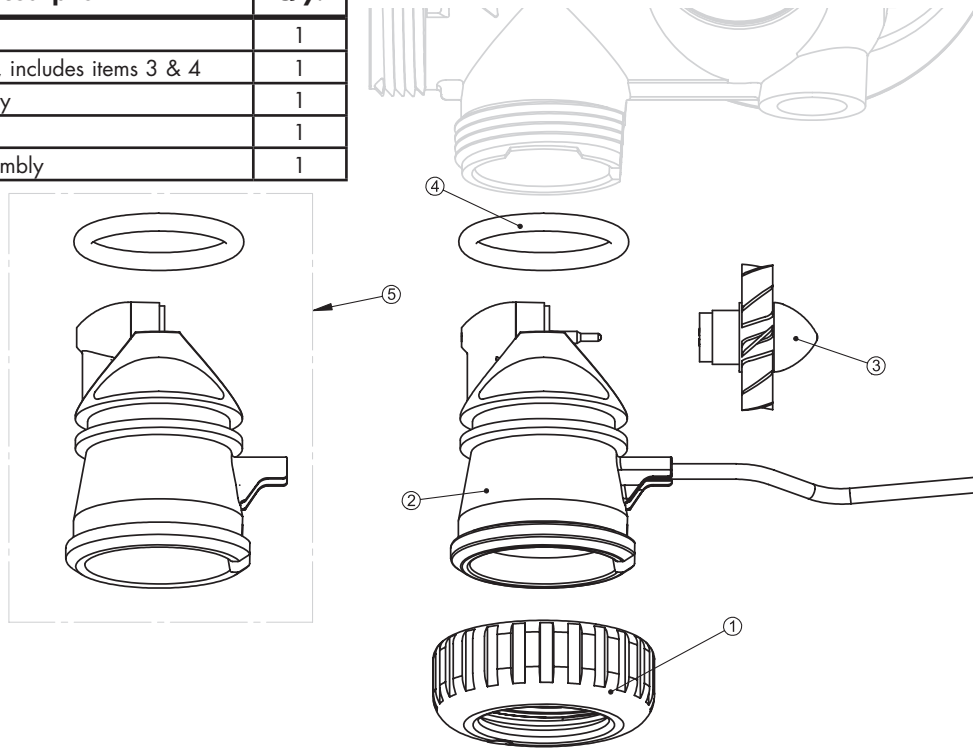
BRINE ELBOW ASSEMBLY			
Item No.	**Part No.**	**Description**	**Qty.**
1	CV3195-01	Refill port plug assembly	1
2	CH4615	Elbow locking clip	1
3	CS1197	Tube insert, 3/8"	1
4	CJCPG-6PBLK	Nut, 3/8"	1
5	CH4613	Elbow cap, 3/8"	1
6	CV3163	O-ring 019	1

REPLACEMENT PARTS:



INJECTOR ASSEMBLIES			
Item No.	**Part No.**	**Description**	**Qty.**
1	CV3176	Injector cap	1
2	CV3152	O-ring 135	1
3	CV3177-01	Injector screen	1
4	CV3010-1Z	Injector assembly plug	1
5	CV3010-1A	**A** injector assembly, **BLACK**	1
	CV3010-1B	**B** injector assembly, **BROWN**	
	CV3010-1C	**C** injector assembly, **VIOLET**	
	CV3010-1D	**D** injector assembly, **RED**	
	CV3010-1E	**E** injector assembly, **WHITE**	
	CV3010-1F	**F** injector assembly, **BLUE**	
	CV3010-1G	**G** injector assembly, **YELLOW**	
	CV3010-1H	**H** injector assembly, **GREEN**	
	CV3010-1I	**I** injector assembly, **ORANGE**	
	CV3010-1J	**J** injector assembly, **LIGHT BLUE**	
	CV3010-1K	**K** injector assembly, **LIGHT GREEN**	
not shown	CV3170	O-ring 011, lower	*
not shown	CV3171	O-ring 013, upper	*
* The injector plug and the injector each use one lower and one upper o-ring			

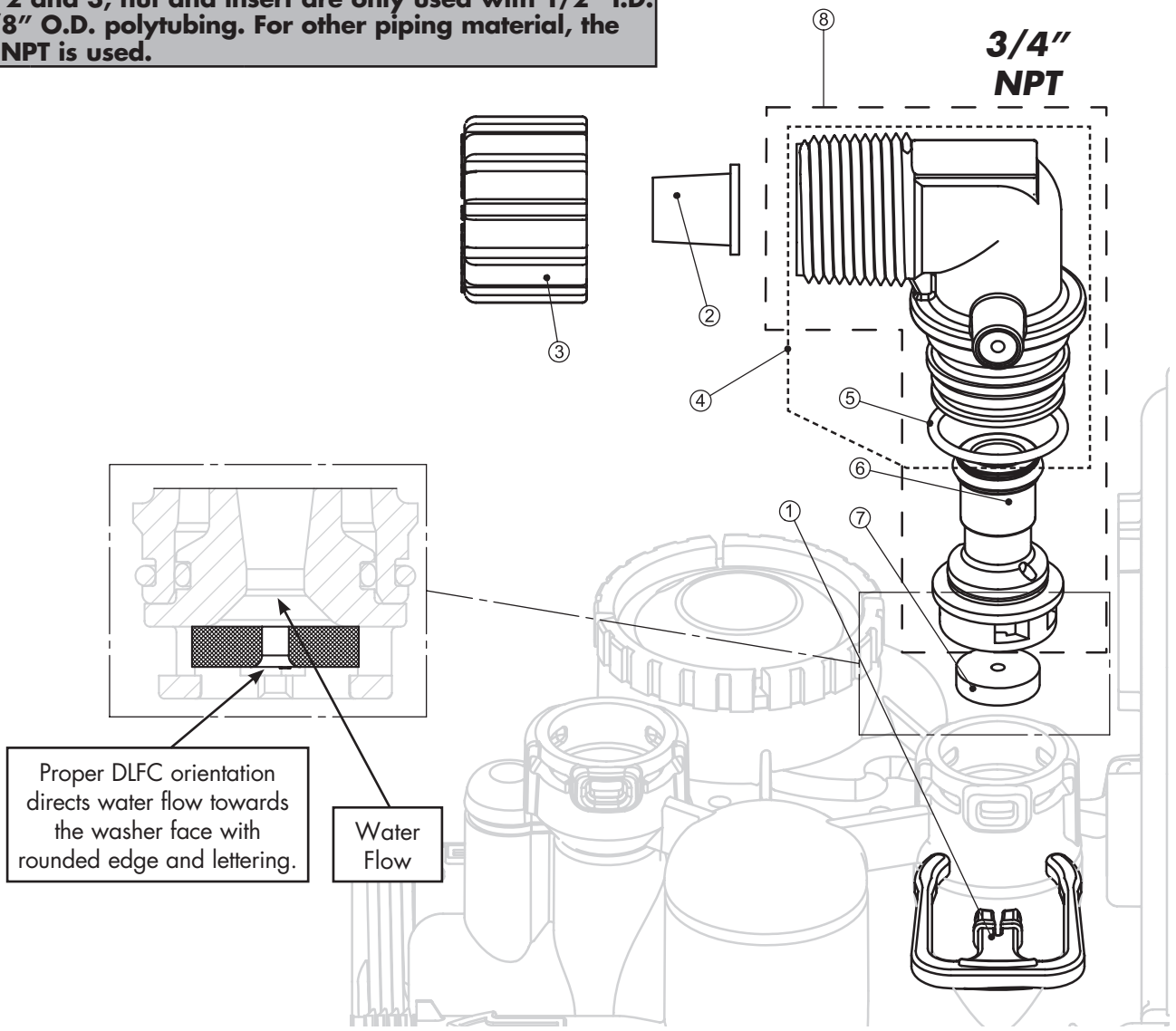
WATER METER & METER PLUG			
Item No.	**Part No.**	**Description**	**Qty.**
1	CV3151	Nut, 1" QC	1
2	CV3003	Meter assembly, includes items 3 & 4	1
3	CV3118-01	Turbine assembly	1
4	CV3105	O-ring 215	1
5	CV3003-01	Meter plug assembly	1



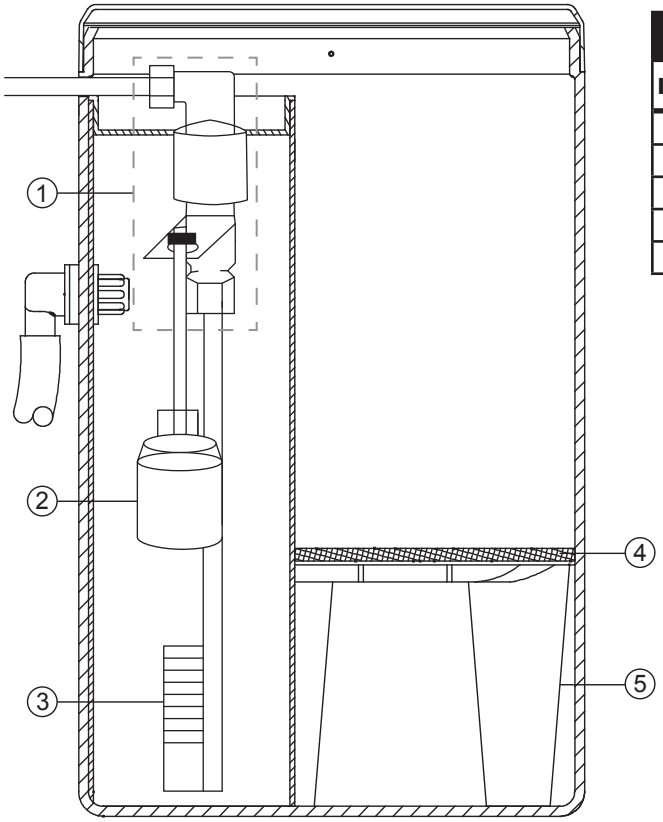
REPLACEMENT PARTS:

DRAIN LINE ASSEMBLY 3/4"			
Item No.	**Part No.**	**Description**	**Qty.**
1	CH4615	Elbow locking clip	1
2	CPKP10TS8-BULK	***Optional*** insert, 5/8" tube	1
3	CV3192	***Optional*** nut, 3/4" drain elbow	1
4	CV3158-01	Drain elbow, 3/4" NPT with O-ring	1
5	CV3163	O-ring 019	1
6	CV3159-01	DLFC retainer assembly	1
7	CV3162-007	0.7 DLFC for 3/4" elbow	1
	CV3162-010	1.0 DLFC for 3/4" elbow	
	CV3162-013	1.3 DLFC for 3/4" elbow	
	CV3162-017	1.7 DLFC for 3/4" elbow	
	CV3162-022	2.2 DLFC for 3/4" elbow	
	CV3162-027	2.7 DLFC for 3/4" elbow	
	CV3162-032	3.2 DLFC for 3/4" elbow	
	CV3162-042	4.2 DLFC for 3/4" elbow	
	CV3162-053	5.3 DLFC for 3/4" elbow	
8	CV3331	Drain elbow and retainer assembly	

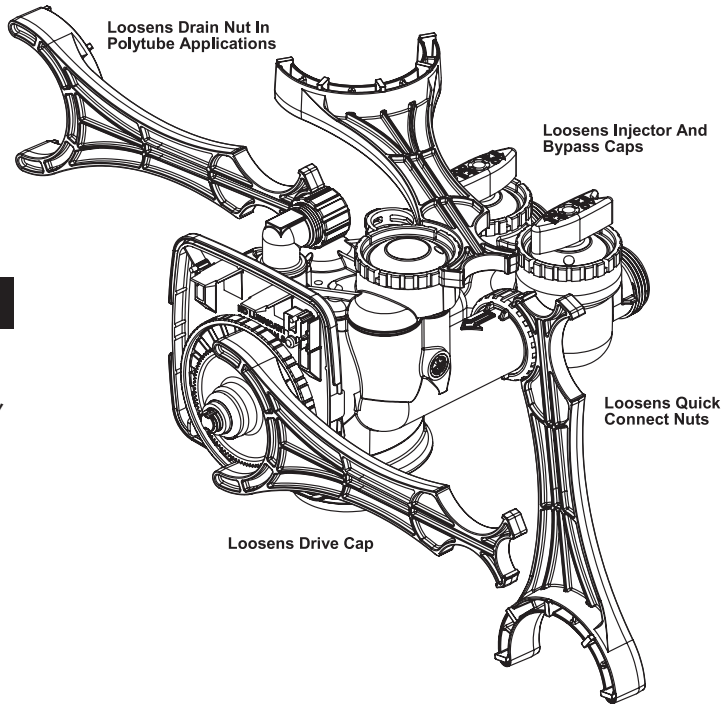
Items 2 and 3, nut and insert are only used with 1/2" I.D. by 5/8" O.D. polytubing. For other piping material, the 3/4" NPT is used.



REPLACEMENT PARTS:



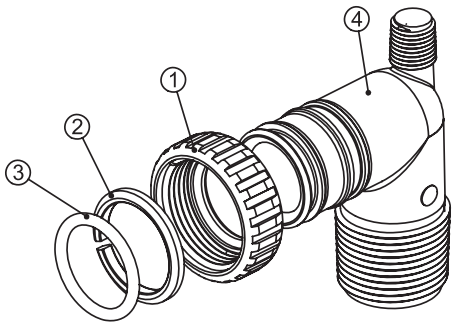
CHLORINE TANK ASSEMBLY			
Item No.	**Part No.**	**Description**	**Qty.**
1	CH4600-50	474 safety float valve	1
2	CH4640-32	474 float assembly	1
3	CH4500-48	474 air check	1
4	CN1043	10" pad for feeder	1
5	CH7001	Grid for feeder	1


Loosens Drain Nut In Polytube Applications
Loosens Injector And Bypass Caps
Loosens Quick Connect Nuts
Loosens Drive Cap

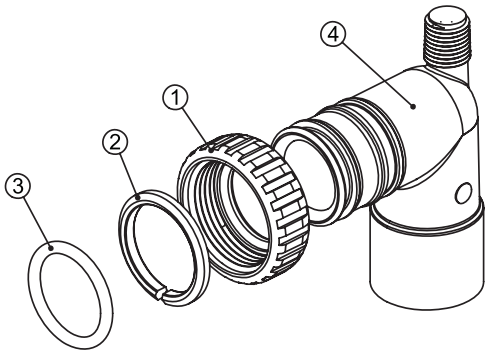
SERVICE WRENCH - CV3193-02

Although no tools are necessary to assemble or disassemble the valve, the *Service Wrench,* (shown in various positions on the valve) is available to aid in assembly or disassembly.

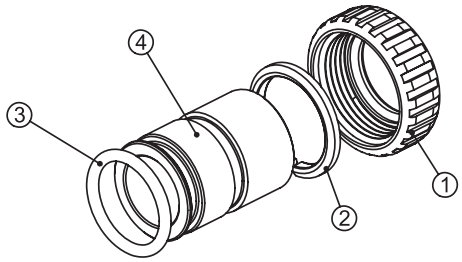
INSTALLATION FITTING ASSEMBLIES:



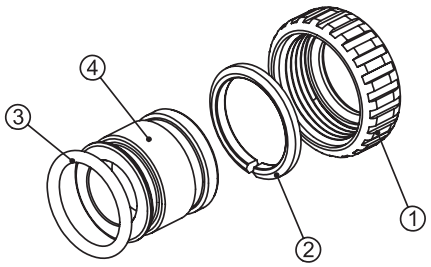
1" PVC MALE NPT ELBOW			
Item No.	**Part No.**	**Description**	**Qty.**
	CV3007	1" PVC male NPT elbow assembly	2
1	CV3151	Nut, 1" quick connect	2
2	CV3150	Split ring	2
3	CV3105	O-ring 215	2
4	CV3149	Fitting	2



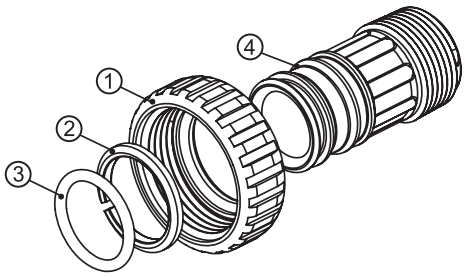
3/4" & 1" PVC SOLVENT ELBOW			
Item No.	**Part No.**	**Description**	**Qty.**
	CV3007-01	3/4" & 1" PVC solvent elbow assembly	2
1	CV3151	Nut, 1" quick connect	2
2	CV3150	Split ring	2
3	CV3105	O-ring 215	2
4	CV3189	Fitting	2



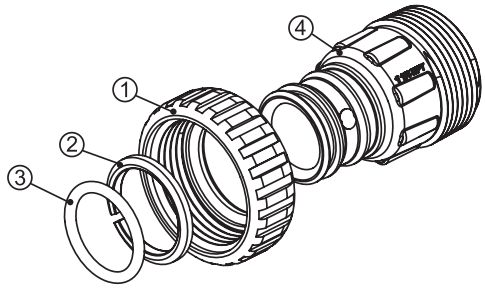
1" BRASS SWEAT			
Item No.	**Part No.**	**Description**	**Qty.**
	CV3007-02	1" brass sweat assembly	2
1	CV3151	Nut, 1" quick connect	2
2	CV3150	Split ring	2
3	CV3105	O-ring 215	2
4	CV3188	Fitting	2



3/4" BRASS SWEAT			
Item No.	**Part No.**	**Description**	**Qty.**
	CV3007-03	3/4" brass sweat assembly	2
1	CV3151	Nut, 1" quick connect	2
2	CV3150	Split ring	2
3	CV3105	O-ring 215	2
4	CV3188-01	Fitting	2

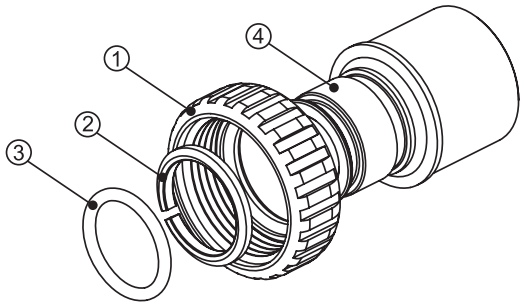


1" PLASTIC MALE NPT			
Item No.	**Part No.**	**Description**	**Qty.**
	CV3007-04	1" plastic male NPT assembly	2
1	CV3151	Nut, 1" quick connect	2
2	CV3150	Split ring	2
3	CV3105	O-ring 215	2
4	CV3164	Fitting	2

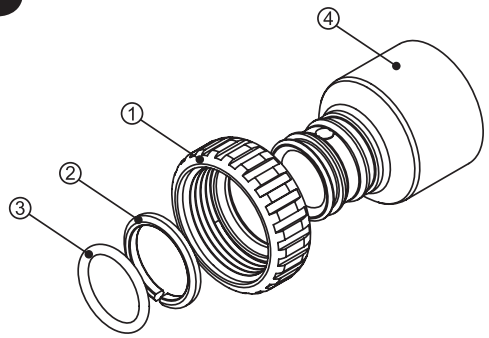


1-1/4" PLASTIC MALE			
Item No.	**Part No.**	**Description**	**Qty.**
	CV3007-05	1-1/4" plastic male assembly	2
1	CV3151	Nut, 1" quick connect	2
2	CV3150	Split ring	2
3	CV3105	O-ring 215	2
4	CV3317	Fitting	2

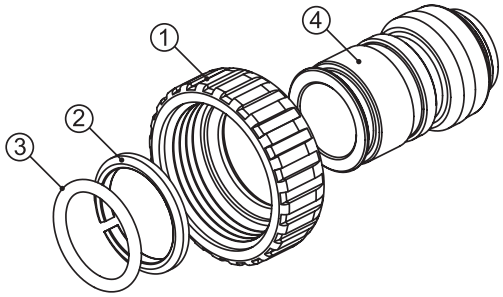
INSTALLATION FITTING ASSEMBLIES:



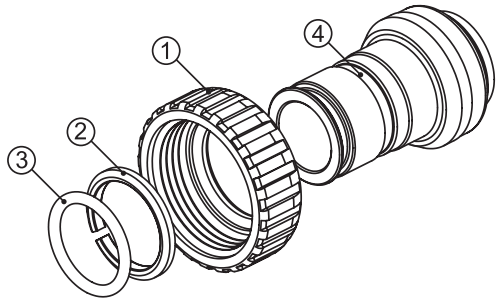
1-1/4" & 1-1/2" BRASS SWEAT			
Item No.	**Part No.**	**Description**	**Qty.**
	CV3007-09	1-1/4 & 1-1/2" brass sweat assembly	2
1	CV3151	Nut, 1" quick connect	2
2	CV3150	Split ring	2
3	CV3105	O-ring 215	2
4	CV3375	Fitting	2



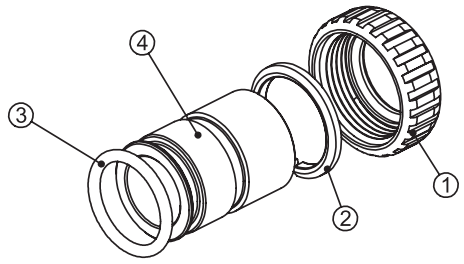
1-1/4" & 1-1/2" PVC SOLVENT			
Item No.	**Part No.**	**Description**	**Qty.**
	CV3007-07	1-1/4" & 1-1/2" PVC solvent assembly	2
1	CV3151	Nut, 1" quick connect	2
2	CV3150	Split ring	2
3	CV3105	O-ring 215	2
4	CV3352	Fitting	2



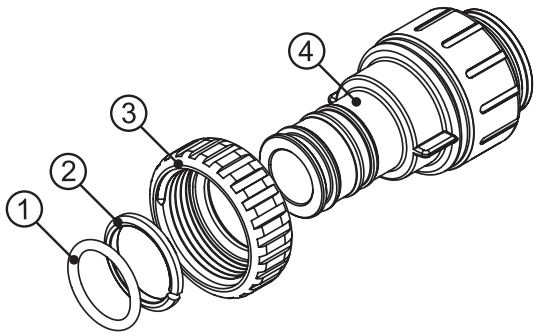
3/4" BRASS SHARK BITE			
Item No.	**Part No.**	**Description**	**Qty.**
	CV3007-12	3/4" brass Shark Bite assembly	2
1	CV3151	Nut, 1" quick connect	2
2	CV3150	Split ring	2
3	CV3105	O-ring 215	2
4	CV3628	Fitting	2



1" BRASS SHARK BITE			
Item No.	**Part No.**	**Description**	**Qty.**
	CV3007-13	1" brass Shark Bite assembly	2
1	CV3151	Nut, 1" quick connect	2
2	CV3150	Split ring	2
3	CV3105	O-ring 215	2
4	CV3629	Fitting	2



3/4" JOHN GUEST ELBOW			
Item No.	**Part No.**	**Description**	**Qty.**
	CV3007-15	3/4" John Guest elbow assembly	2
1	CV3151	Nut, 1" quick connect	2
2	CV3150	Split ring	2
3	CV3105	O-ring 215	2
4	CV3790	Fitting	2



1" JOHN GUEST			
Item No.	**Part No.**	**Description**	**Qty.**
	CV3007-17	1" John Guest elbow assembly	2
1	CV3151	Nut, 1" quick connect	2
2	CV3150	Split ring	2
3	CV3105	O-ring 215	2
4	CV4045	Fitting	2

IMPRESSION SERIES FILTER SPECIFICATIONS:

When specifying Impression Plus Series units, use "IMP" prefix in place of "IM".

ACID NEUTRALIZERS

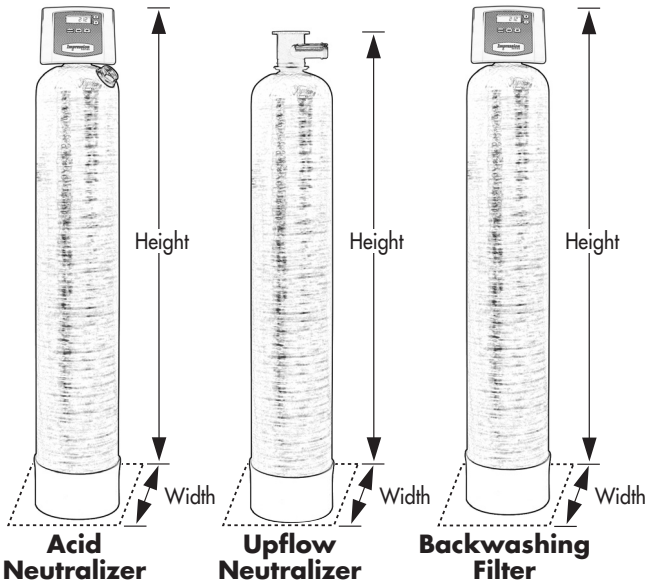
MODEL NUMBER	IMBF-1044MAN	IMBF-1054MAN	IMBF-1354MAN	IMAN-1044	IMAN-1054	IMAN-1354
Mineral Type Amount (Cu Ft)	Calcite or Mix 1.0	Calcite or Mix 1.5	Calcite or Mix 2.5	Calcite or Mix 1.0	Calcite or Mix 1.5	Calcite or Mix 2.5
Gravel Amount/Size (No. 1) Gravel Amount/Size (No. 2)	14 lb 1/4 x 1/8 7 lb #20	14 lb 1/4 x 1/8 7 lb #20	21 lb 1/4 x 1/8 7 lb #20	14 lb 1/4 x 1/8 7 lb #20	14 lb 1/4 x 1/8 7 lb #20	21 lb 1/4 x 1/8 7 lb #20
Continuous Flow (GPM) Peak Flow (GPM)	4.8 11.0	4.8 11.0	6.9 16.0	NA	NA	NA
Backwash Flow (GPM)	5.3	5.3	7.5	NA	NA	NA
Total Dimensions	10"W x 52"H	10"W x 62"H	13"W x 62"H	10"W x 50"H	10"W x 60"H	13"W x 60"H
Weight Unfilled/Media (Lbs)	63/90	66/135	84/225	63/90	66/135	84/225

BACKWASHING FILTERS

MODEL NUMBER	IMBF-1044	IMBF-1054	IMBF-1354	IMBF-1044	IMBF-1054	IMBF-1354
Mineral Type Amount (Cu Ft)	Carbon 1.0	Carbon 1.5	Carbon 2.5	Turbidex 1.0	Turbidex 1.5	Turbidex 2.5
Gravel Amount/Size (No. 1) Gravel Amount/Size (No. 2)	14 lb 1/4 x 1/8 7 lb #20	14 lb 1/4 x 1/8 7 lb #20	21 lb 1/4 x 1/8 7 lb #20	14 lb 1/4 x 1/8 7 lb #20	14 lb 1/4 x 1/8 7 lb #20	21 lb 1/4 x 1/8 7 lb #20
Continuous Flow (GPM) Peak Flow (GPM)	3.0 8.0	5.0 9.0	7.0 12.0	6.0 10.0	7.0 11.0	11.0 18.0
Backwash Flow (GPM)	5.3	5.3	7.5	8.0	8.0	14.0
Total Dimensions	10"W x 52"H	10"W x 62"H	13"W x 62"H	10"W x 52"H	10"W x 62"H	13"W x 62"H
Weight Unfilled/Media (Lbs)	63/33	66/50	84/83	63/50	66/75	84/125

IRON FILTERS

MODEL NUMBER	IMAF-1044MGS	IMAF-1054MGS	IMAF-1354MGS
Mineral Type Amount (Cu Ft)	Greensand 1.0	Greensand 1.5	Greensand 2.5
Gravel Amount/Size (No. 1) Gravel Amount/Size (No. 2)	14 lb 1/4 x 1/8 7 lb #20	14 lb 1/4 x 1/8 7 lb #20	21 lb 1/4 x 1/8 7 lb #20
Continuous Flow (GPM) Peak Flow (GPM)	4.0 6.0	4.0 6.0	6.0 9.0
Backwash Flow (GPM)	5.3	5.3	7.5
Total Dimensions	10"W x 52"H	10"W x 62"H	13"W x 62"H
Weight Unfilled/Media (Lbs)	63/90	66/135	84/225



CYCLE TIMES AND USAGE

MODEL	IMBF-1044 MAN		IMBF-1054MAN		IMBF-1354MAN	
	MIN.	GAL.	MIN.	GAL.	MIN.	GAL.
Backwash	5	26.5	5	26.5	5	37.5
Filtering	20	0	20	0	20	0
Rapid Rinse	1	5.3	1	5.3	1	7.5
Backwash	5	26.5	5	26.5	5	37.5
Filtering	10	0	10	0	10	0
Rapid Rinse	6	31.8	6	31.8	6	45.0
Total	47	90.1	47	90.1	4	127.5

MODEL	IMBF-1044 CARBON		IMBF-1054 CARBON		IMBF-1354 CARBON		IMBF-1044 TURBIDEX		IMBF-1054 TURBIDEX		IMBF-1354 TURBIDEX	
	MIN.	GAL.	MIN.	GAL.	MIN.	GAL.	MIN.	GAL.	MIN.	GAL.	MIN.	GAL.
Backwash	5	26.5	5	26.5	5	37.5	5	45	5	45	5	65
Rinse	1	5.3	1	5.3	1	7.5	1	9	1	9	1	13
Backwash	5	26.5	5	26.5	5	37.5	5	45	5	45	5	65
Rinse	1	5.3	2	10.6	2	15	1	9	2	18	2	26
Total	12	63.6	13	68.9	13	97.5	12	108	13	117	13	169

IMPRESSION SERIES AIR FILTER SPECIFICATIONS:

When specifying Impression Plus Series units, use "IMP" prefix in place of "IM" or "IP" in place of "I".

SULFUR AND IRON AIR FILTERS

MODEL NUMBER	IMS-1054	IMS-1248	IMS-1354	IMB-1054	IMB-1248	IMB-1354
Mineral Type Amount (Cu Ft)	Catalytic Carbon 1.0	Catalytic Carbon 1.5	Catalytic Carbon 2.0	Birm 1.0	Birm 1.5	Birm 2.0
Gravel Amount/Size (No. 1) Gravel Amount/Size (No. 2)	14 lb 1/4 x 1/8 7 lb #20	21 lb 1/4 x 1/8 7 lb #20	21 lb 1/4 x 1/8 7 lb #20	14 lb 1/4 x 1/8 7 lb #20	21 lb 1/4 x 1/8 7 lb #20	21 lb 1/4 x 1/8 7 lb #20
Continuous Flow (GPM) [1]Peak Flow (GPM)	5.0 20.0	6.0 22.0	7.0 22.0	5.0 18.0	6.0 19.0	7.0 19.0
Backwash Flow (GPM)	5.3	7.5	9.0	5.3	9.0	10.0
[2]Iron Removal	1.0	1.0	1.0	5.0	5.0	5.0
[3]Hydrogen Sulfide Removal	5.0	5.0	5.0	1.0	1.0	1.0
pH Range	Greater than 7.0	Greater than 7.0	Greater than 7.0	Greater than 7.0	Greater than 7.0	Greater than 7.0
Total Dimensions	10"W x 62"H	12"W x 56"H	13"W x 62"H	10"W x 52"H	10"W x 62"H	13"W x 62"H
Weight Filled (Lbs)	99	129	150[4]	106	139	164[4]

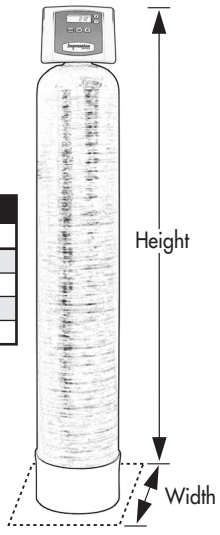
NOTE: The IMS and IMB are approved for use in the State of Wisconsin.

[1] Not tested at peak flow rate. Water quality may vary.
[2] Iron removal may vary for hydrogen sulfide systems, depending on local conditions.
[3] Hydrogen sulfide removal may vary for iron systems, depending on local conditions.
[4] Units ship with media separate.

AIR CAT FILTERS

MODEL NUMBER	IAG-1054	IAG-1248	IAG-1354	IACG-1054AN	IACG-1248AN	IACG-1354AN
Mineral Type [1]Amount (Cu Ft)	Greensand Plus 1.0	Greensand Plus 1.5	Greensand Plus 2.0	Greensand Plus 0.5 Calcite 0.5	Greensand Plus 0.75 Calcite 0.75	Greensand Plus 1.0 Calcite 1.0
Gravel Amount/Size (No. 1) Gravel Amount/Size (No. 2)	14 lb 1/4 x 1/8 7 lb #20	21 lb 1/4 x 1/8 7 lb #20	21 lb 1/4 x 1/8 7 lb #20	14 lb 1/4 x 1/8 7 lb #20	21 lb 1/4 x 1/8 7 lb #20	21 lb 1/4 x 1/8 7 lb #20
Garnet Amount (Lbs)	13.0	19.0	22.0	13.0	19.0	22.0
Continuous Flow (GPM) [2]Peak Flow (GPM)	3.0 6.0	3.0 8.0	5.0 10.0	3.0 6.0	3.0 8.0	5.0 10.0
Backwash Flow (GPM)	6.5	9.0	11.0	6.5	9.0	11.0
[3]Iron Removal	4.0	4.0	4.0	4.0	4.0	4.0
[4]Hydrogen Sulfide Removal	0.5	0.5	0.5	0.5	0.5	0.5
pH Range	Greater than 7.0	Greater than 7.0	Greater than 7.0	Greater than 6.3	Greater than 6.3	Greater than 6.3
Total Dimensions	10"W x 62"H	12"W x 56"H	13"W x 62"H	10"W x 52"H	10"W x 62"H	13"W x 62"H
Weight Filled (Lbs)	169	233	286[5]	169	233	286[5]

[1] Amount of acid neutralizing media may vary depending on local conditions.
[2] Not tested at peak flow rate. Water quality may vary.
[3] Iron removal may vary, depending on local conditions.
[4] Hydrogen sulfide removal may vary, depending on local conditions.
[5] Units ship with media separate.



CYCLE TIMES AND USAGE

MODEL	IMS-1054		IMS-1248		IMS-1354		IMB-1054		IMB-1248		IMB-1354	
	MIN.	GAL.	MIN.	GAL.	MIN.	GAL.	MIN.	GAL.	MIN.	GAL.	MIN.	GAL.
Backwash Air	4	16	4	23	4	27	4	16	4	23	4	27
Backwash	10	50	10	80	10	100	10	50	10	80	10	100
Regenerant Draw	60	25	60	40	60	50	60	25	60	40	60	50
Total	74	91	74	143	74	177	74	91	74	143	74	177

Water Conditioner Limited Warranty

Congratulations. You have purchased one of the finest water treatment systems available. In the unlikely event of a problem due to defects in material and workmanship, we proudly warrant our water conditioners to the original owner, when installed in accordance with Water-Right® specifications. This warranty is effective from the date of original installation for:

A period of TEN YEARS:	**Fiberglass mineral tank except for damages due to freezing, high pressure (120 PSI and above), extreme temperature (100°F and above) or a vacuum on the system.**
A period of FIVE YEARS:	**The control valve and all internal components. The salt storage container.**
A period of ONE YEAR:	**All other conditioner components.**

Any part found defective within the terms of this warranty will be repaired or replaced by the dealer. You pay only freight from our factory and local dealer charges. To obtain local warranty service, contact original dealer or an authorized service dealer. If no authorized dealer is located in your area, please ship defective part or component freight prepaid to Water-Right, Inc., 1900 Prospect Ct., Appleton, Wisconsin 54914. Water-Right, at its discretion, will repair or replace the part or component at its expense and return part freight collect.

The above provisions of the warranty are valid as long as the unit is connected in compliance with local plumbing codes and in an equivalent manner and condition of the original installation and is owned by the original owner.

This warranty does not cover damages due to accident, fire, flood, freezing, or any other Act of God. We are not responsible for damages due to change in water conditions, misapplication, misuse, neglect, vacuum, oxidizing agents, alteration, or lack of maintenance. No responsibility is assumed for loss of use of the unit, inconvenience, loss or damage to real or personal property or any incidental or consequential damages. Furthermore, we assume no liability and extend no warranties, express or implied, for the use of this product with a non-potable water source. **To the extent permitted by law, Water-Right disclaims all implied warranties, including without limitation warranties of merchantability and fitness for particular purpose; to the extent required by law, any such implied warranties are limited in duration to the aforementioned period specified above.**

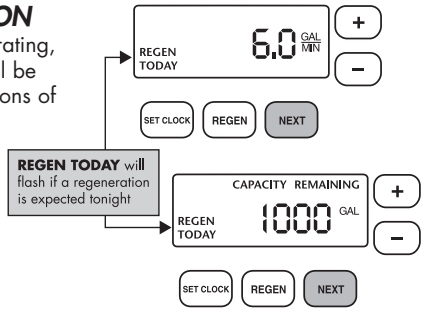
Some states do not allow the exclusion of implied warranties or limitations on how long an implied warranty lasts. Consequently, the above limitation may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

QUICK REFERENCE GUIDE:

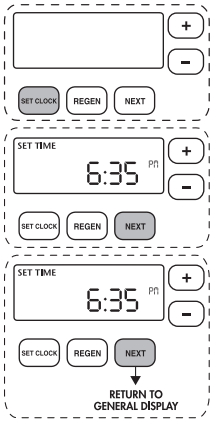
GENERAL OPERATION

When the system is operating, one of three displays will be shown: time of day, gallons of treated water available, or gallons per minute. Pressing ***NEXT*** will toggle between the three choices.



TO SET TIME OF DAY

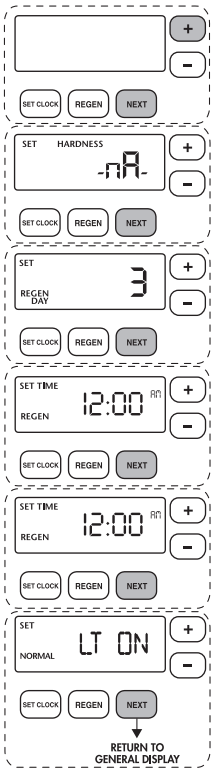
In the event of a prolonged power outage, time of day flashes, indicating that this needs to be reset. All other information will be stored in memory no matter how long the power outage. Please complete the steps as shown to the right. To access this mode, press ***SET CLOCK.***



1. Accessed by pressing ***SET CLOCK***
2. Adjust hours with ✚ and ━ buttons, AM/PM toggles at 12.
3. Press ***NEXT***
4. Adjust minutes with ✚ and ━ buttons.
5. Press ***NEXT*** to complete and return to normal operation.

ADJUST DAYS BETWEEN REGENERATION OR TIME OF REGENERATION

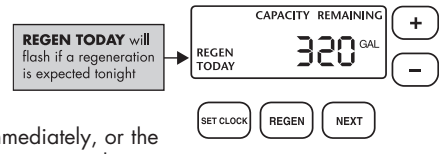
For initial setup or to make adjustments, please complete the steps as shown to the right.



1. Access by pressing ***NEXT*** and ✚ button simultaneously.
2. Hardness display shows "-nA-" when used as a filter.
3. Press ***NEXT***
4. Adjust days between regenerations using ✚ and ━ buttons.
5. Press ***NEXT***
6. Adjust time of regeneration hour with ✚ and ━ buttons, AM/PM toggles at 12.
7. Press ***NEXT***
8. Adjust time of regeneration minutes with ✚ and ━ buttons.
9. Adjust backlight display function with ✚ and ━ buttons.
10. Press ***NEXT*** to complete and return to normal operation.

MANUAL REGENERATION

NOTE: If you need to initiate a manual regeneration, either immediately, or the same night at the preprogrammed time for regeneration (typically 12:00 AM), complete the following steps.

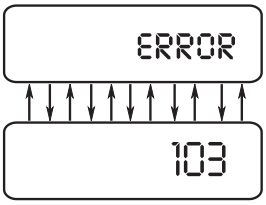


For Immediate Regeneration:
Press and hold ***REGEN*** until valve motor starts (typically 3 seconds).

For Regeneration the same night:
Press and release ***REGEN*** (notice that flashing "REGEN TODAY" appears).

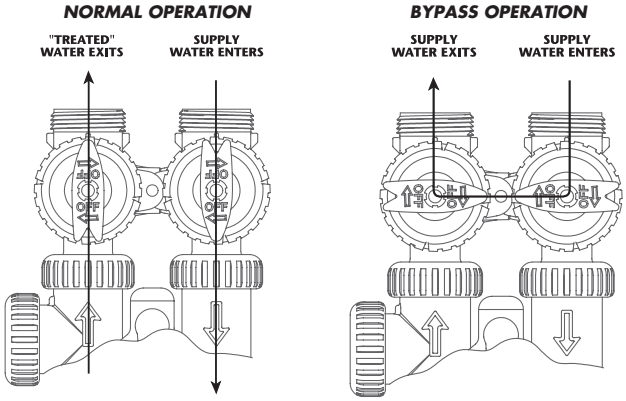
ERROR

If the display toggles between "Error" and an error code (i.e. a number), call a service technician and report the error code.



BYPASS VALVE OPERATION

To shut off water to the system, position arrow handles as shown in the bypass operation diagram below. If your valve doesn't look like the diagram below, contact your service technician for instructions on how to shut off water.



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